Austin Transit Partnership

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Austin Light Rail Phase 1 Project

Draft Environmental Impact Statement

Appendix D: Transportation

Austin, TX

January 2025

Austin Transit Partnership

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Acronyms and Abbreviations

Term/Acronym	Definition
ATP	Austin Transit Partnership
CAMPO	Capital Area Metropolitan Planning Organization
CapMetro	Capital Metropolitan Transportation Authority
City	City of Austin
DEIS	Draft Environmental Impact Statement
FTA	Federal Transit Administration
I-35	Interstate 35
LOS	level of service
MLK	Martin Luther King Jr.
OMF	operations and maintenance facility
Project	Austin Light Rail Phase 1 Project
ROW	right-of-way
SH 71	State Highway 71
STOPS	Simplified Trips-on-Project Software
US 183	U.S. Highway 183
UT	University of Texas

1 Introduction

The Federal Transit Administration (FTA) and Austin Transit Partnership (ATP) are completing an environmental review of the Austin Light Rail Phase 1 Project (the Project) in Austin, Texas. This transportation technical report was prepared to support the Project's Draft Environmental Impact Statement (DEIS) in accordance with the National Environmental Policy Act and related laws and regulations. FTA and ATP are the Lead Agencies in the National Environmental Policy Act process.

The purpose of this report is to document the existing condition and potential effects for transportation elements potentially affected by the Project. This report summarizes results of the transportation assessment for the Project. This report has been divided into the following four subsets: transit, active transportation, traffic, and parking. For the purposes of this assessment, an analysis of the No Build Alternative was also conducted.

This report is based on the preliminary engineering design dated April 19, 2024, for the Project.

2 Regulatory Setting

This section lists the regulatory documents referenced and incorporated in the transportation analysis.

2.1 Federal

The Transportation Research Board's *Highway Capacity Manual* contains concepts, guidelines, and procedures for computing the capacity and quality of service of various highway facilities, including freeways, rural and urban highways, arterial roads, roundabouts, and signalized and unsignalized intersections, and the effects of mass transit, bicycles, and pedestrians on the performance of these systems.

2.2 State Regulations

The Texas Department of Transportation's *Access Management Manual* notes that proper access management assists in protecting the substantial public investment in transportation by preserving roadway efficiency and enhancing traffic safety, thus reducing the need for expensive improvements. Furthermore, access management can substantially reduce traffic accidents, personal injury, and property damage.

2.3 Local Guidance

The City of Austin's (City) Transportation Criteria Manual is one of nine technical criteria manuals cited in Austin's Land Development Code. The Transportation Criteria Manual defines the rules, requirements, and technical guidelines for building mobility infrastructure in Austin.

3 Methodology

The following sections present the approach to data collection, assumptions regarding Project design elements, and evaluation of potential effects. This methodology is divided into four facility types: transit, active transportation, traffic, and parking. The Study Area for each facility type is defined in the sections below. ATP documented the existing transportation system conditions by collecting data from transportation agencies and conducting an inventory of conditions in the transportation Study Area.

3.1 Data Collection

Data sources varied across the transportation facility types and are summarized below:

- Transit automatic passenger count data were obtained from the Capital Metropolitan Transportation Authority (CapMetro) (2023). GIS data for existing transit routes and stops were obtained from the City's Open Data Portal (City of Austin 2023a), and CapMetro ridership and performance data for spring 2023 were provided by the agency. Forecasts for the Build Alternative were modeled by the Project team using the FTA Simplified Trips-on-Project Software (STOPS) model (FTA 2024).
- This study discusses the existing and planned bicycle and pedestrian facilities to be constructed as part of the Project. GIS data for existing sidewalk and bicycle facilities were obtained from the City's Open Data Portal.
- For the traffic analysis, roadway geometry, intersection control, and peak period traffic and pedestrian volumes for each Design Option are used to assess potential effects of light rail on roadway facilities and traffic patterns. The analysis tools used, including traffic simulation modeling and travel demand modeling, are listed in Section 3.5. Roadway characteristics such as lane configurations, posted speeds, and traffic control methods were obtained from the Project's Base Design dated April 19, 2024.
- A combination of field surveys and desktop reviews were used for the parking analysis. The field review of parking conditions was conducted in 2023 through site visits to areas in the corridor where street parking is most abundant and could face the biggest effect. The remainder of the corridor was inventoried in August 2023 using Google Earth imagery and ArcGIS and updated with City parking data provided on April 3, 2024.

3.2 Transit

The transit analysis compares transit service levels, ridership, and travel times among 2019 service levels, the Build Alternative, and the No Build Alternative to evaluate each alternative's potential effects on transit in the Project corridor. Several plan documents guiding CapMetro, including the Connections 2025 Transit Development Plan (2017) and the Project Connect Central Texas [High-Capacity Transit] HCT System Plan (2013), frame the underlying understanding of the existing transit system and goals for the future.

3.2.1 Study Area

The Study Area is comprised of a 0.5-mile buffer around the Project and a 1.5-mile radius around each proposed station, the operations and maintenance facility (OMF), each park-and-ride, and other proposed facilities. These components combine to form the Study Area for transit. Because most existing transit routes that interact with the Project extend beyond the boundaries of the Study Area, some discussion of the larger CapMetro service area is warranted throughout the assessment of potential effects.

3.2.2 Existing Conditions Methods

The Build Alternative closely follows the alignment of the existing CapMetro Rapid Route 801 bus route and CapMetro Bus Route 20 local bus route, and 2019 ridership data for routes was used as the baseline to contextualize forecasts for the future scenarios. Information used for the transit existing conditions analysis primarily comes from CapMetro. GIS data for existing transit routes and stops was obtained from the City's Open Data Portal, and CapMetro ridership and performance data for spring 2023 was provided by the agency.

3.2.3 No Build and Build Alternative Methods

Ridership forecasts for the No Build and Build Alternatives were generated using the FTA STOPS model (2024). The STOPS model uses trip-generation inputs and assumptions about the Project such as frequency, vehicle capacity, visibility, and traffic condition forecasts to measure the expected number of trips that would be made using light rail. The outputs show how Project scenarios would affect expected transit ridership throughout the system.

Estimated light rail travel times for the Build Alternative and Design Options were derived using a Vissim[1] model, dated April 26, 2024, that considered factors such as distance between stations, design speeds, dwell time, and signal and intersection assumptions. Transit signal priority for light rail vehicles was assumed for the entire corridor.

3.3 Active Transportation

The traffic analysis builds on the previously completed Planning and Environmental Linkages studies for the Orange and Blue Line projects (CapMetro 2020a, 2020b). These studies discuss the existing and planned bicycle and pedestrian facilities constructed as part of the Project. This analysis provides an overview of existing and planned facilities in the active transportation Study Area, made up of a 0.5-mile buffer around the Project and 1.5 miles around each proposed station, the OMF, each park-and-ride, and other proposed facilities. Active transportation facility mileage (protected bike lanes, sidewalks, etc.) and crossings are used to identify existing opportunities and constraints in each station area for bicycle and pedestrian access as well as to evaluate the potential effects of the No Build and Build Alternatives.

[1] Vissim is a microscopic, multi-modal traffic simulation software tool widely used for traffic modeling, analysis, and planning in urban and inter-urban traffic environments.

This assessment was completed at the station area level as of July 2023 using facilities in place from the City's Open Data Portal. Existing conditions findings are reported from north to south along the Project corridor and at the station locations. For the potential effects and mitigation sections, active transportation facilities are reviewed by station.

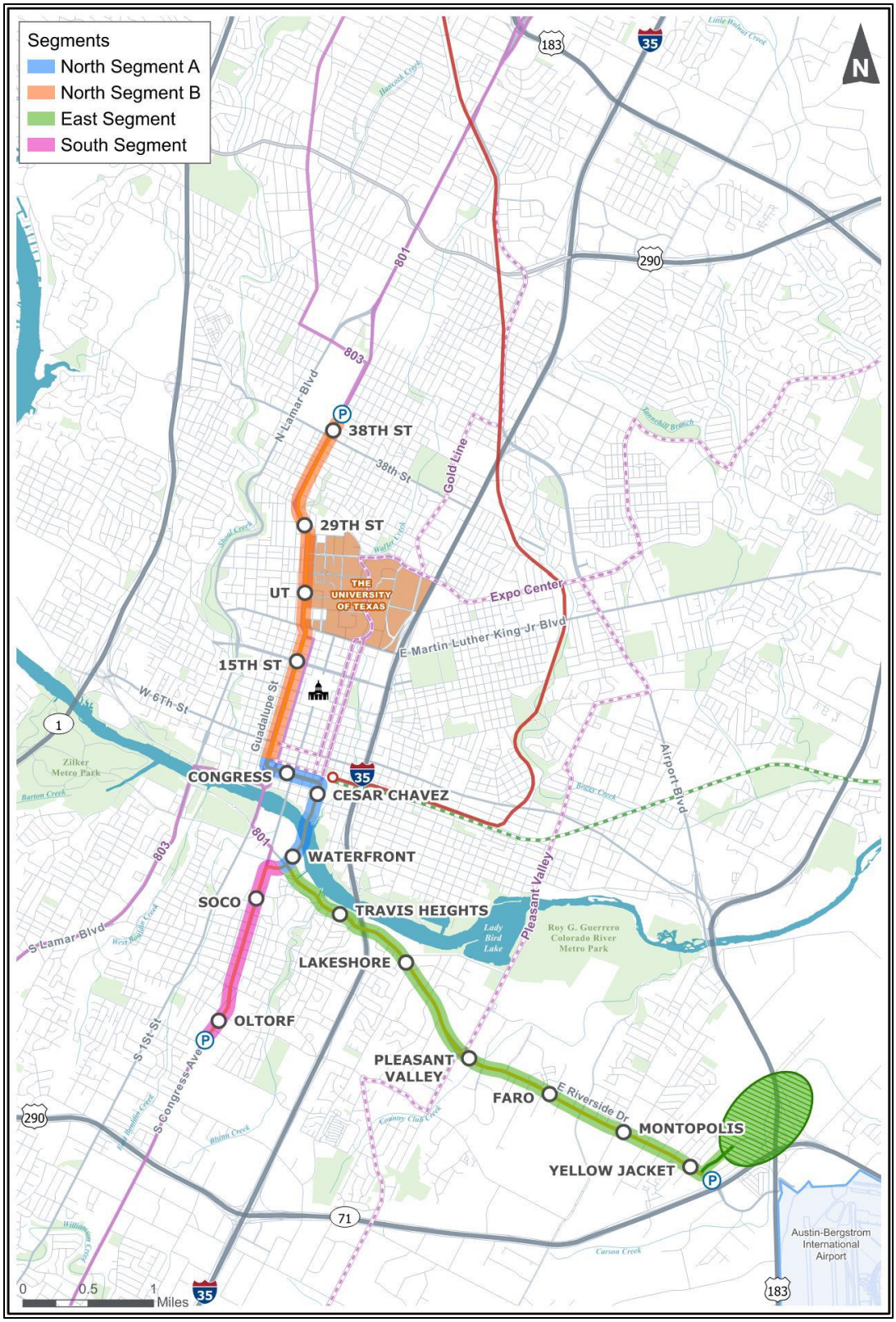
3.4 Traffic

This traffic analysis reflects the roadway geometry, intersection control, and peak period traffic volumes for the Build Alternative and each Design Option to assess the Project's potential effects on roadway facilities and traffic patterns.

As part of the planning process, the Project team developed Planung Transport Verkehr (PTV) Vissim microsimulation models to evaluate traffic operations for the Orange Line project (Vissim 11) and the Blue Line project (Vissim 2021) for their entire respective limits. The Vissim models were then split into four segments—North Segment A, North Segment B, East Segment, and South Segment—as shown in **Figure 3-1**, per the Build Alternative alignment. For this analysis, microsimulation traffic models were developed in accordance with the Federal Highway Administration's Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software.

Vissim microsimulation software was selected to model interactions between various travel modes, implementation of traffic signal control with transit signal priority, and upstream and downstream effects of congestion. In a Vissim model, each individual vehicle that enters the system has a desired destination in mind and must follow a prescribed set of driving rules and behaviors (e.g., speed, gap acceptance, following distance) on route to its destination. What emerges is an overall picture of the traffic flow in the given conditions.

Figure 3-1: Austin Light Rail Segmentation Map



Source: ATP 2024.

3.4.1 Traffic Modeling Inputs

The current Base Design Traffic Analysis is reflective of the Base Design dated April 29, 2024. Changes to the previous model outside of the above-mentioned areas—North Segment B (north of Martin Luther King Jr. [MLK] Boulevard) and East Segment—were minimal.

Additionally, a separate analysis was completed for the Drag (a nickname for the segment of Guadalupe Street that runs along the western edge of the University of Texas at Austin [UT]) using TransModeler, a mesoscopic traffic simulation with the volume demand developed from Capital Area Metropolitan Planning Organization (CAMPO) travel demand model outputs. Though this analysis did not completely reflect the Guadalupe Street configuration shown in the Base Design, it analyzed five options for Guadalupe Street to incorporate light rail with different traffic lane assignments. This analysis helped establish a methodology for the proposed traffic rerouting on the Drag and in the Central Business District.

A Vissim model requires a list of inputs to the system that must be sourced or estimated before the modeling can be completed. The initial inputs needed to build the model are the traffic volumes, pedestrian volumes, transit lanes, signal timing parameters, and geometry of the roadway, including the number of lanes, presence and length of turn lanes, presence of driveways, any restrictions to turning movements, or any other physical feature of the roadway that dictates traffic flow. The roadway geometry elements in this model followed the Base Design dated April 19, 2024.

Different metropolitan areas have different driving cultures, different municipal codes that dictate traffic flow, and other variations in driver behavior. To reflect these characteristics in the traffic analysis, the Vissim models must be calibrated before they can be used to estimate traffic performance. In a previous effort, ATP created calibrated existing conditions models in consultation with CapMetro and the City. The calibrations used for the existing conditions model were retained for the build models developed and discussed in this report. All models developed for the North Segment A, North Segment B, East Segment, and South Segment build scenarios have retained the driving behavior settings previously established for the corridor.

3.4.2 Vehicle Traffic Volumes

For the Base Design models, a 2022 base year was assumed. For intersections located in both North Segment B north of MLK Boulevard and the East Segment, 2045 projected data were developed. For the downtown area, ATP, in coordination with the City's Transportation and Public Works Department, determined that the volumes needed to be updated to reflect post-COVID patterns. The 2045 no build network developed for the Orange and Blue Lines was used in the analysis except for new counts taken in 2023 at 3rd, 4th, and 5th Streets to capture the shift in the alignment from 4th Street to 3rd Street. Adjustment factors and a 1.5 percent annual growth rate were applied to represent 2022 existing and 2045 no build conditions. ATP developed this methodology in coordination with the City's Transportation and Public Works Department.

Furthermore, traffic volumes were adjusted to reflect anticipated traffic generated by park-and-rides within the Study Area at 38th Street, Oltorf Street, and Yellow Jacket Lane. Traffic volumes were adjusted to include an increase in entering and existing traffic based on the proposed vehicle spaces, determined by anticipated ridership, at each park-and-ride:

- 300 parking spaces for the park-and-ride north of 38th Street;
- 100 parking spaces for the park-and-ride south of Oltorf Street; and
- 150 parking spaces for the park-and-ride east of Yellow Jacket Lane.

The traffic volume increases at the three intersections were included in the Base Design and Design Options analysis for all segments.

3.4.3 Pedestrian Traffic Volumes

Pedestrian volumes were set in the future build model to reflect a pedestrian level equal to or greater than the 2019 pedestrian volumes. Although light rail can be expected to generate more pedestrian traffic, a mode shift from personal vehicles to pedestrians was not considered.

3.4.4 Transit Routes and Schedules

The Project alignment would be a major route for existing transit service in Austin. The existing local and rapid bus lines that use the corridor in the traffic model were incorporated into the Vissim models per the CapMetro schedule. The light rail transit route in the Vissim models was assumed to operate with 10-minute headways (the distance between buses) for each segment during the peak hour.

3.4.5 Traffic Signal Timing Information

During the previous existing conditions modeling effort, the Project team worked closely with City signal engineers to incorporate many features of the existing traffic signal timing into the Vissim models. For the build models, the team developed new signal timings throughout the corridor to best accommodate the flow of light rail.

The team assumed that signals would maintain traffic flow progression along the light rail travel route, with priority given to directions along the Project alignment during both AM and PM peak hours. Synchro models were developed for the Project corridor to estimate optimized signal timing cycle lengths (limited to a maximum of 150 seconds), splits, and intersection offsets. However, there were some exceptions for major intersections and intersections with high pedestrian movements. Modeled cycle lengths are shown in **Table 3-1**.

Table 3-1: Modeled Cycle Lengths for the Project

S. No.	Location	Cycle Length (seconds)
1	Interstate 35 (I-35) and East Riverside Drive	160
2	Congress Avenue and Oltorf Street	150
3	1st Street and Riverside Drive	
4	Barton Springs Road and South Congress Avenue	
5	1st Street and Barton Springs Road	
6	Downtown (Along Guadalupe and Lavaca Street)	120
7	Congress Avenue Intersections	

The limited right-of-way (ROW) on Guadalupe Street does not allow left-turn bays, and vehicles would be prohibited from turning left across the guideway along Guadalupe Street between 18th and 4th Streets. The intersection phasing scheme was adjusted to safely accommodate buses, right-turning automobiles, pedestrian crossings, and light rail operations.

All left-turn or U-turn movements with a dedicated turning lane adjacent to the light rail were restricted to operate as protected-only movements in the signalization. The left-turn or U-turn movements without a dedicated turning lane adjacent to the light rail guideway would operate with a split phase (one providing green time to all movements at a particular approach at once) in the signalization.

3.5 Parking

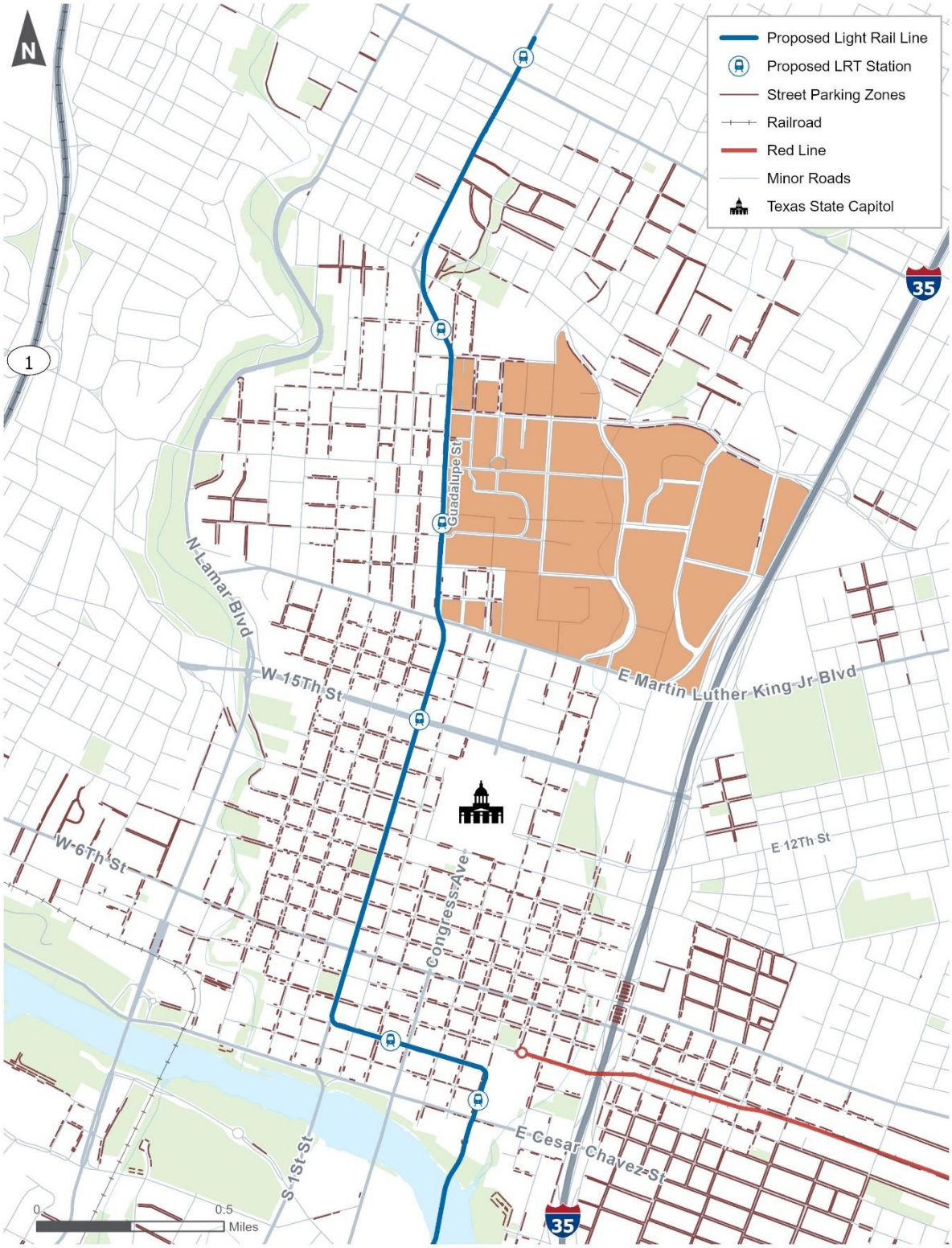
The Project would affect the corridor's roadway design configurations, affecting the amount of on-street parking in certain areas. The Project could eliminate up to 607 on-street parking spaces, most of which are in the existing Study Area along the Drag, the Central Business District, and South Congress Avenue.

A combination of field and desktop surveys were used to identify locations and counts of parking spaces at the proposed station locations and along the Project corridor. On-street parking was identified and inventoried along the Project. Overall effects on parking are focused on the Study Area, which consists of the limits of Project construction with a 0.5-mile buffer around each proposed station location.

The Project team inventoried parking along the corridor in August 2023 using Google Earth imagery and ArcGIS. The location, type, and approximate number of spaces that would be affected by Build Alternative and Design Options were recorded for the observed parking facilities. The team conducted a field review of parking conditions on October 10–12, 2023. The location and occupancy rate of parking spaces were recorded during the field review to verify the desktop survey data. The data presented below reflect the amount of parking spots used in October 2023 along with the parking spots count provided by the City on April 3, 2024.

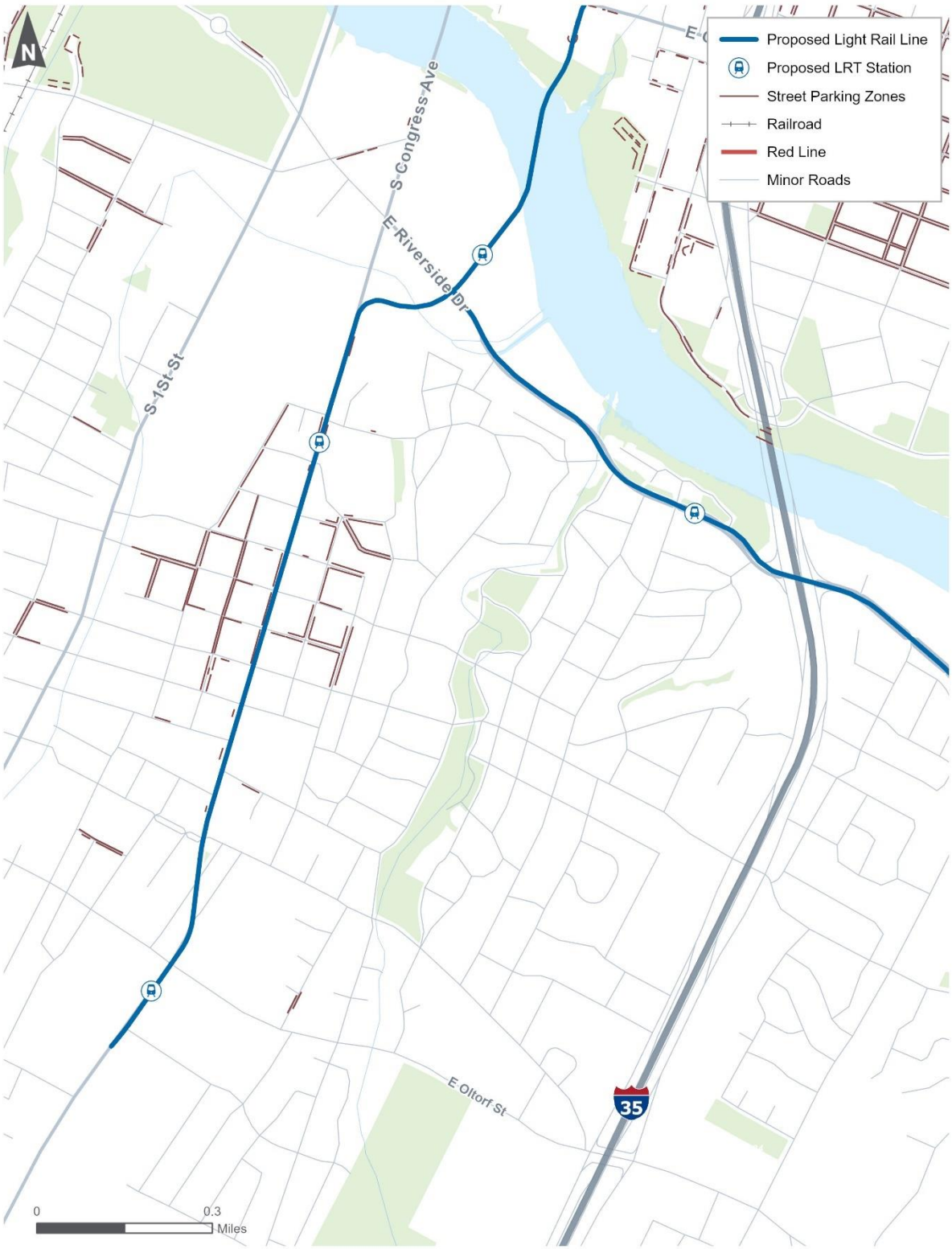
A variety of parking facilities and varying levels of parking demand exist within the parking Study Area. Section 5.5 evaluates the existing availability of parking in the Study Area. **Figure 3-2** and **Figure 3-3** show the City's parking data along the Project broken up north and south of Lady Bird Lake, respectively. "Street parking zones" define locations providing free or metered on-street parking.

Figure 3-2: The Drag and Central Business District Parking Map



Source: CapMetro 2024, City of Austin 2024, TSPB 2024

Figure 3-3: South Congress Avenue Parking Map



Source: CapMetro 2024, City of Austin 2024, TSPB 2024

4 Affected Environment

This section describes the transportation plans, transit services, active transportation, traffic, and parking that occur in the Study Area.

4.1 Transportation Plans in the Study Area

The following transportation plans outline the vision for transportation services in Austin:

- ***Austin Strategic Mobility Plan*.** On April 11, 2019, the Austin City Council unanimously adopted a comprehensive, citywide transportation plan, the *Austin Strategic Mobility Plan*. The plan guides the City's transportation policies, programs, projects, and investments for the next 20 years or more. The *Austin Strategic Mobility Plan* plans for all the ways people get around Austin, including driving, biking, walking, scooting, and taking public transportation like buses and trains (City of Austin 2023b).
- **CapMetro *Connections 2025* Transit Development Plan.** *Connections 2025* is CapMetro's 10-year transit plan for a more frequent, reliable, and better-connected system. It guides the evolution of the region's network over a 5-year period and identifies long-range opportunities over the next decade. The plan was adopted by the CapMetro Board of Directors in February 2017 after more than 1 year of public outreach.
- **CAMPO *Regional Arterials Concept Inventory*.** The *Regional Arterials Concept Inventory* provides mobility choices that are safe, convenient, reliable, and efficient. Arterials are roadways that connect to freeways, local streets, and destinations. This inventory builds on local planning efforts and takes a regional focus on these roadways that serve as major corridors and play a vital role in connecting people and places (CAMPO 2019).
- **CAMPO *2045 Regional Transportation Plan*.** The *2045 Regional Transportation Plan* coordinates transportation projects in the CAMPO region; prioritizes projects, activities, and programs; and estimates the fiscal capacity of the region to fund the projects (CAMPO 2024).
- ***East Riverside Corridor Master Plan*.** The City's *East Riverside Corridor Master Plan* provides a vision for how the East Riverside Corridor should be developed to make drivers aware that the space is shared with bicyclists and pedestrians. It defines the corridor as one with active urban centers along a rail line that connects area residents, employees, and visitors with the Austin-Bergstrom International Airport and downtown. The plan forecasts 20 years of transportation needs for the region (City of Austin 2010).
- ***South Central Waterfront Vision Framework Plan*.** The *South Central Waterfront Vision Framework Plan* lays the foundation for district-wide green infrastructure paired with high-quality urban design and an interconnected network of public spaces, streets, lakeside trails, and parks (City of Austin 2016).

- ***Project Connect System Plan*.** Building off several iterations of comprehensive corridor studies, the *Project Connect System Plan* lays out the vision for Project Connect service enhancements including high-capacity transit investments, local service improvements, and expansion to commuter rail and park-and-ride facilities (CapMetro 2020c).
- **CapMetro *Strategic Plan FY2024*.** The *Strategic Plan FY2024* sets forth CapMetro's strategic goals and objectives for fiscal year 2024. It also discusses agency priorities, which are the essential actions needed to drive their goals and objectives forward, as well as strategies to outline how CapMetro intends to make progress toward its goals and objectives (CapMetro 2024).

4.2 Transit

This section describes the existing transit service and facilities in the transit Study Area that would be affected by the Project.

4.2.1 Transit Facilities and Services

The Project alignment follows two of the most prominent corridors in the City, passing through high-activity commercial and residential areas including the Drag, Downtown Austin, the South Congress Business District, and East Riverside Drive. Existing transit service in the transit Study Area is operated by CapMetro. The Project would add light rail service to the transit network as part of the Project Connect System Plan.

Figure 4-1 shows CapMetro's existing transit routes in the Study Area. **Table 4-1** lists these routes along with their spring 2023 average daily ridership numbers.

Figure 4-1: CapMetro Transit Routes

Table 4-1: CapMetro Transit Routes

Route Number	Route Name	Route Type	Average Weekday Daily Riders (2023)
1	North Lamar/South Congress	Local	3,057
2	Rosewood	Frequent	1,973
3	Burnet/Manchaca	Local	2,571
4	7th Street	Frequent	1,452
5	Woodrow/Lamar	Local	973
7	Duval/Dove Springs	Frequent	5,112
10	South 1st/Red River	Frequent	5,098
18	MLK Boulevard	Local	537
20	Manor Road/Riverside	Frequent	5,044
30	Barton Creek Square	Local	1,325
50	Round Rock Tech Ridge*	Local	109
103	Manchaca Flyer	Flyer	28
105	South 5th Flyer	Flyer	29
111	South Mopac Flyer	Flyer	44
135	Dell Limited	Flyer	31
142	Metric Flyer	Flyer	44
152	Round Rock Tech Ridge Limited*	Local	77
171	Oak Hill Flyer	Flyer	36
201	Southpark Meadows*	Local	474
214	Northwest Feeder*	Local	54
217	Montopolis Feeder*	Local	149
228	VA Clinic*	Local	271
233	Decker/Daffan Lane*	Local	111
237	Northeast Feeder*	Local	231
243	Wells Branch	Local	350
271	Del Valle Feeder*	Local	798
300	Springdale/Oltorf	Frequent	6,014
310	Parker/Wickersham	Local	1,002
311	Stassney	Frequent	1,841

Route Number	Route Name	Route Type	Average Weekday Daily Riders (2023)
315	Ben White*	Local	686
318	Westgate/Slaughter*	Local	839
322	Chicon/Cherrywood	Local	427
323	Anderson	Local	435
324	Georgian/Ohlen	Local	1,096
325	Metric/Rundberg	Frequent	2,366
333	William Cannon	Frequent	1,467
335	35th/38th	Local	372
337	Koenig/Colony Park	Frequent	1,451
339	Tuscany	Local	280
345	45th	Local	147
350	Airport Boulevard	Local	1,298
383	Research/Braker	Local	1,409
392	Braker	Local	463
465	MLK/UT	Special	228
466	Kramer/Domain	Special	67
550	Red Line	MetroRail	1,456
640	Forty Acres	UT Shuttle	270
641	East Campus	UT Shuttle	419
642	West Campus/UT	UT Shuttle	1,245
656	Intramural Fields/UT	UT Shuttle	941
661	Far West/UT	UT Shuttle	766
663	Lake Austin/UT	UT Shuttle	888
670	Crossing Place	UT Shuttle	617
671	North Riverside	UT Shuttle	359
672	Lakeshore	UT Shuttle	379
801	North Lamar/South Congress	CapMetro Rapid	7,303
803	Burnet/South Lamar	CapMetro Rapid	3,644
935	Tech Ridge Express	Express	30
980	North Mopac Express	Express	44
982	Pavilion Express	Express	134

Route Number	Route Name	Route Type	Average Weekday Daily Riders (2023)
985	Leander/Lakeline Direct	Express	315
990	Manor/Elgin Express	Express	51

Source: CapMetro 2023a.
*Routes not located in transit Study Area.

4.2.1.1 CapMetro Bus Route 20 Manor Road/Riverside

CapMetro Bus Route 20 Manor Road/Riverside runs approximately 16 miles between Austin-Bergstrom International Airport and Lyndon Baines Johnson Early College High School (near the U.S. Highway 183 [US 183] and 183 Toll and Manor Road interchange) via Downtown Austin. Buses operate in general traffic lanes in most of the Study Area, except for bus-only transit priority lanes on Guadalupe and Lavaca Streets between MLK Boulevard and 3rd Street (approximately 1 mile) and on East Riverside Drive between Summit Street and Grove Boulevard (approximately 2.1 miles). The route is one of the highest ridership routes in the CapMetro system, with 5,044 average daily riders and averaging about 29 passengers per revenue hour on weekdays in spring 2023. Route 20 offers daily high-frequency bus service. The spring 2023 schedule is shown in **Table 4-2**.

Table 4-2: CapMetro Bus Route 20 Schedule, 2023

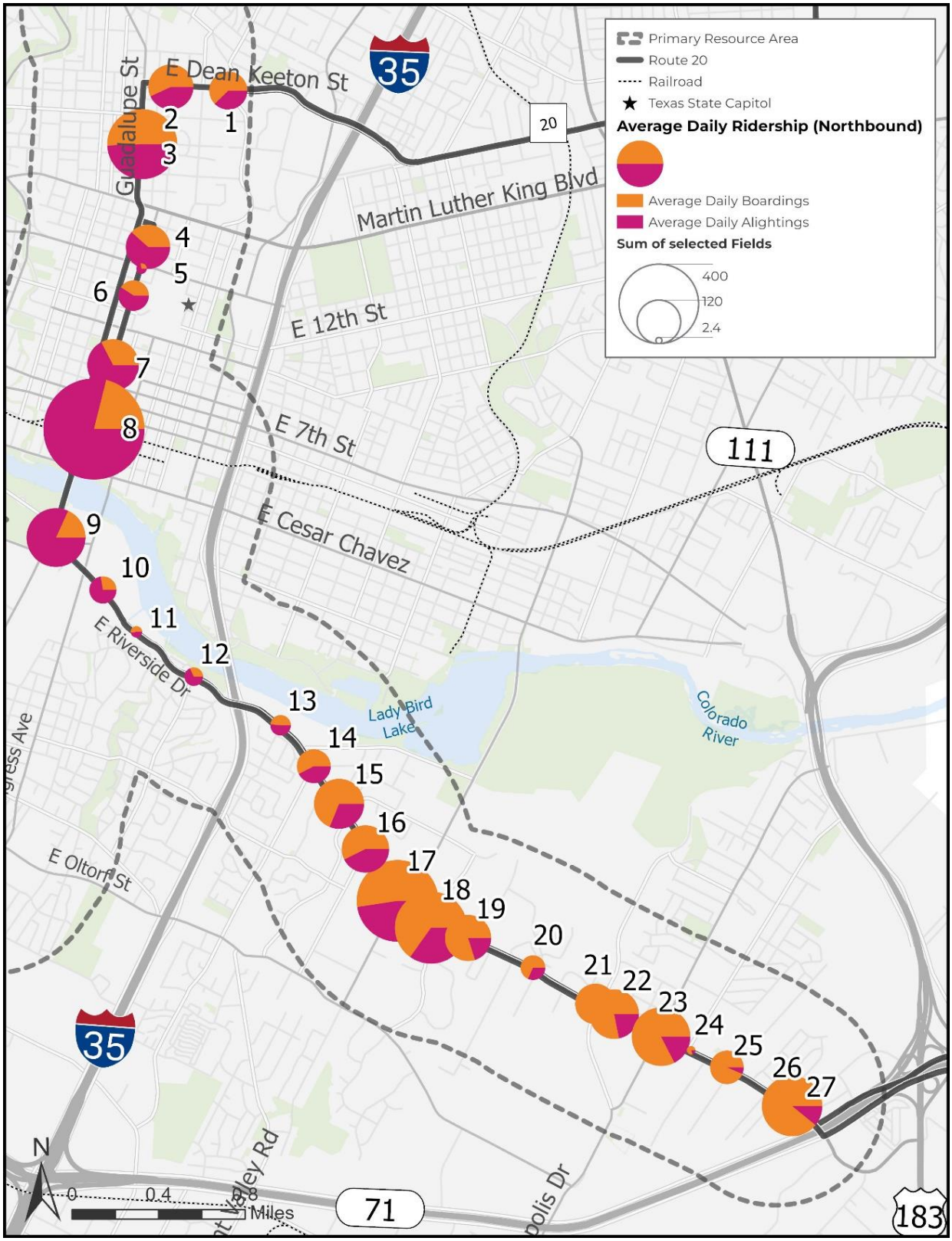
Time	Frequency (Minutes)
Weekday	
5 a.m. – 9:30 p.m.	15
10 p.m. – 12:30 a.m.	30
Saturday	
6 a.m. – 7 a.m.	30
7 a.m. – 8 p.m.	15
8 p.m. – 1 a.m.	30
Sunday	
6 a.m. – 7 a.m.	30
7 a.m. – 8 p.m.	15
8 p.m. – 1 a.m.	30

Source: CapMetro 2023b.

4.2.1.2 CapMetro Bus Route 20 Bus Stops

CapMetro Bus Route 20 currently has a total of 56 stops—27 northbound and 29 southbound—between Dean Keeton/San Jacinto and Riverside/Airport Commerce. Republic Square Station (Guadalupe Street/4th Street) in central Downtown Austin and 1971 Pleasant Valley/Riverside (westbound) are the two highest ridership bus stops along the route in the Study Area. Republic Square Station also serves all downtown routes and is a transfer hub in the CapMetro system. Other stops with high average boarding activity include 201 Dean Keeton/University, 2231 Guadalupe Street/West Mall UT, Lavaca Street/4th Street, 4522 Riverside/Wickersham, 6000 Riverside/Clubview, 6306 Riverside/Montopolis, UT Mall Station, and Vic Mathias/Auditorium. **Figure 4-2** and **Figure 4-3** show spring 2023 ridership for Route 20 by stop for northbound and southbound buses, respectively; the corresponding ridership information is also listed in **Table 4-3** and **Table 4-4**.

Figure 4-2: CapMetro Bus Route 20 Ridership by Bus Stop, Northbound



Source: CapMetro 2023a.

Table 4-3: CapMetro Bus Route 20 Ridership by Bus Stop, Spring 2023 (Northbound)

Station	Number (Figure 4-2)	Average Daily Boardings	Average Daily Alightings
307 Dean Keeton/San Jacinto	1	61	36
201 Dean Keeton/University	2	80	56
2231 Guadalupe Street/West Mall UT	3	160	137
1609 Lavaca/17th (Midblock)	4	37	58
Lavaca/15th	5	10	14
Capitol	6	22	28
813 Lavaca/8th (Farside)	7	54	93
Lavaca/4th	8	118	438
Vic Mathias/Auditorium	9	33	124
150 Riverside/Newning	10	15	39
504 Riverside/Newning	11	4	6
1000 East Riverside/Travis Heights	12	7	14
1600 Riverside/Summit	13	9	10
1770 Riverside/Shore District	14	24	20
Riverside/Town Creek	15	94	70
Riverside/Willow Creek	16	80	40
1971 Pleasant Valley/Riverside (Westbound)	17	182	143
4522 Riverside/Wickersham	18	198	110
4823 Riverside/Crossing Place	19	90	20
Riverside/Faro	20	23	13
5902 Riverside/Grove	21	77	13
6000 Riverside/Clubview	22	102	20
6306 Riverside/Montopolis	23	148	20
6600 Riverside/Vargas	24	34	2
6810 Riverside/Frontier Valley	25	38	3
7200 Riverside/Yellow Jacket	26	11	3
7308 Riverside/ Coriander	27	74	16

Source: CapMetro 2023a.

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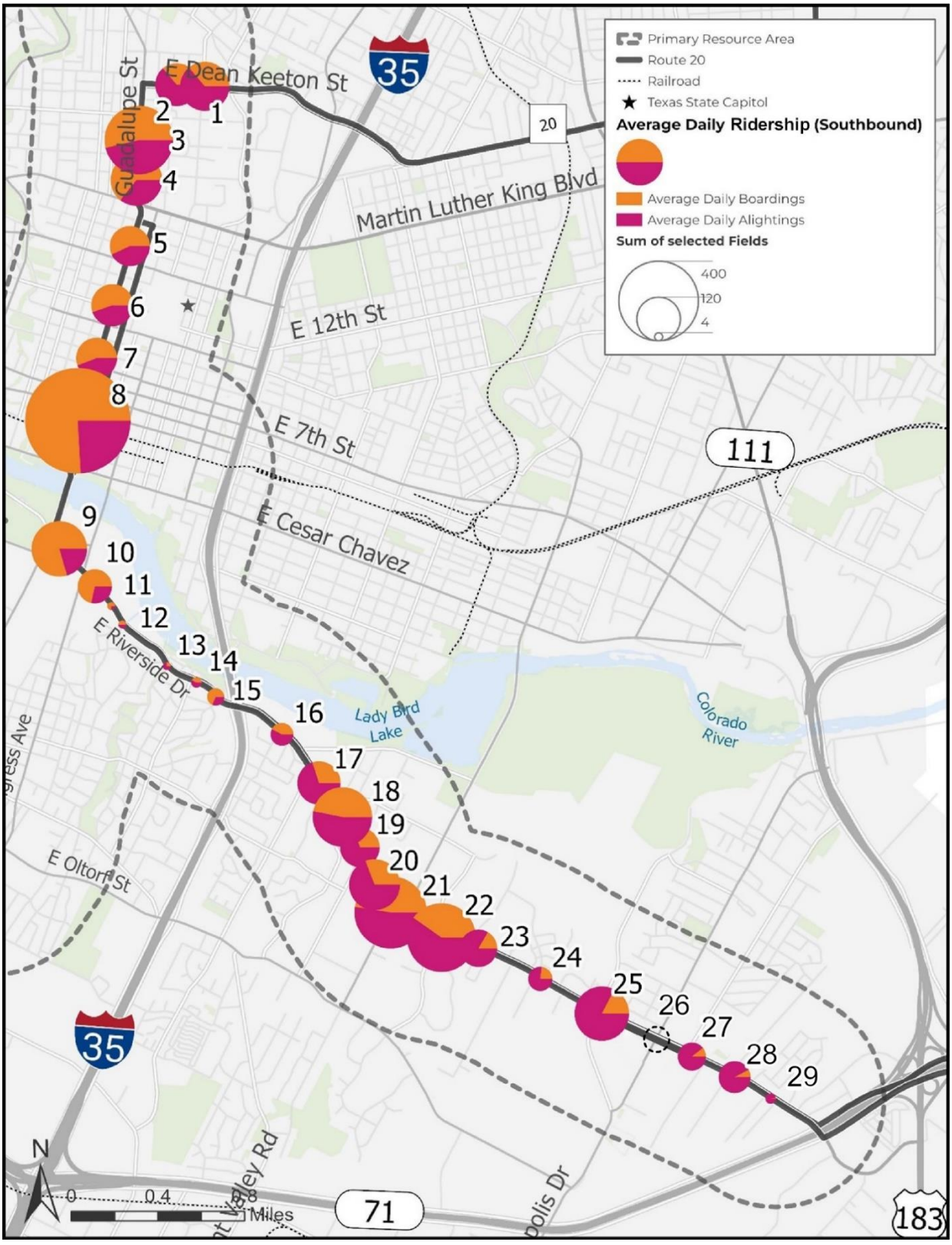
Figure 4-3: CapMetro Bus Route 20 Ridership by Bus Stop, Southbound



Source: CapMetro 2023a.

Table 4-4: CapMetro Bus Route 20 Ridership by Bus Stop, Spring 2023 (Southbound)

Station	Number (Figure 4-3)	Average Daily Boardings	Average Daily Alightings
Dean Keeton/Speedway (Northeast Corner)	1	58	92
116 Dean Keeton/University	2	40	71
UT West Mall Station	3	131	144
Guadalupe/West 21st Street	4	85	52
Guadalupe/16th Street	5	54	39
Capitol	6	60	54
812 Guadalupe/8th	7	55	38
Guadalupe/4th	8	437	147
Vic Mathias/Auditorium	9	104	29
Riverside/Congress	10	50	21
205 Riverside/Congress	11	2	1
325 Riverside/Newning	12	4	2
715 Riverside/Alameda	13	2	3
1005 East Riverside/Travis Heights	14	2	2
Riverside/Kenwood	15	10	6
Riverside/Summit	16	10	14
1805 Riverside/Parker	17	25	57
Riverside/Burton	18	73	109
2237 Riverside/Willow Creek	19	25	54
Riverside Drive/Willow Creek	20	35	96
2507 Riverside/Pleasant Valley	21	109	153
4549 Riverside/Wickersham	22	92	157
4825 Riverside/Kirksey	23	12	59
5401 Riverside/Faro	24	7	19
5925 Riverside/Grove	25	26	134
6217 Riverside/Montopolis	26	N/A	N/A
6605 Riverside/Vargas	27	25	158
6903 Riverside/Maxwell	28	2	35
Riverside/Yellow Jacket	29	13	92

Source: CapMetro 2023a.

4.2.1.3 CapMetro Rapid Route 801

CapMetro Rapid Route 801 runs approximately 21 miles between Tech Ridge Park-and-Ride (approximately 9 miles north of 38th Street) and Southpark Meadows (approximately 5 miles south of Oltorf Street). It serves high-activity commercial and residential areas, including the Drag, Downtown Austin, and South Congress Avenue. Buses operate in general traffic lanes along most of the corridor, except for bus-only transit priority lanes on Guadalupe Street and Lavaca Street between MLK Boulevard and 3rd Street (approximately 1 mile). The route has the highest ridership in the CapMetro system, averaging 7,303 daily riders and 23 passengers per revenue hour on weekdays in 2023. In the Build Alternative, Route 801 service would be complemented by the Project from 38th Street to Oltorf Street, shifting the corridor's primary service to a dedicated guideway separate from general traffic. Route 801 offers daily high-frequency bus service. The spring 2023 schedule is shown in **Table 4-5**.

Table 4-5: Route 801 Schedule, Spring 2023

Time	Frequency (Minutes)
Weekday	
5 a.m. – 7 a.m.	15
7 a.m. – 6 p.m.	10
6 p.m. – 8 p.m.	15
8 p.m. – 12:30 a.m.	20
Saturday	
6 a.m. – 8 p.m.	15
8 p.m. – 12 a.m.	20
Sunday	
6 a.m. – 7 p.m.	15
7 p.m. – 11:30 p.m.	20

Source: CapMetro 2023c.

4.2.1.4 CapMetro Rapid Route 801 Rapid Stations

CapMetro Rapid Route 801 currently has 12 stations in the Study Area. Republic Square Station, located in central Downtown Austin, and UT Station, the primary transit station adjacent to UT, are two of Route 801's the highest ridership stations and are major transfer hubs in the CapMetro system. As a key north-south spine in the CapMetro system, Route 801 is a frequently used route with high transfer activity. Other stations with high average boarding activity in the Study Area include UT Dean Keeton Station (Northbound), Austin History Center, and Oltorf Station (Northbound). **Figure 4-4** and **Figure 4-5** show spring 2023 ridership for Route 801 by station for northbound and southbound buses, respectively; the corresponding ridership information is also listed in **Table 4-6** and **Table 4-7**Error! Reference source not found..

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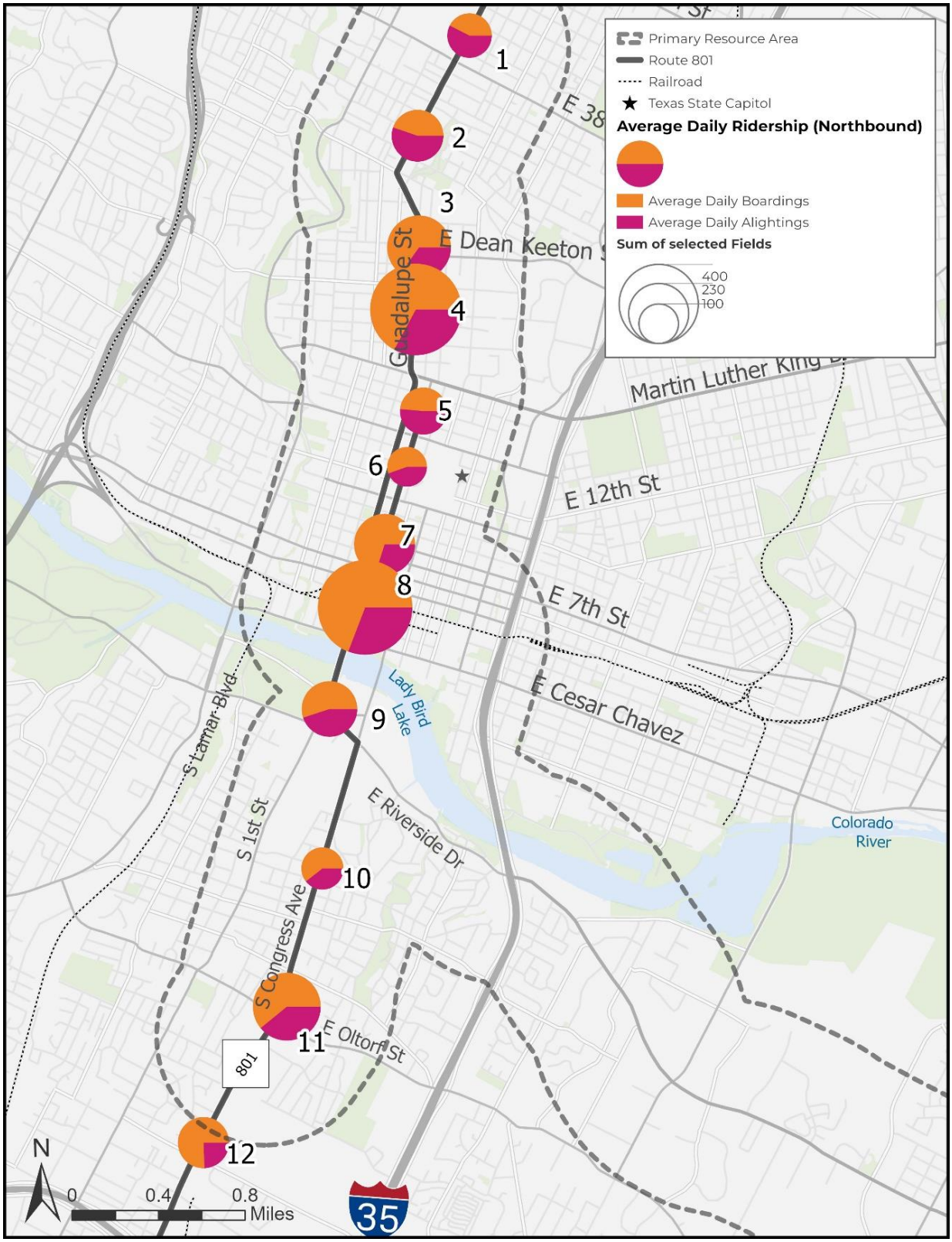
Figure 4-4: CapMetro Rapid Route 801 Ridership by Rapid Station, Northbound



Source: CapMetro 2023a.

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Table 4-6: CapMetro Rapid Route 801 Ridership by Rapid Station, Spring 2023 (Northbound)

Station	Number (Figure 4-4)	Average Daily Boardings	Average Daily Alightings
Hyde Park	1	53	86
31st Street	2	61	86
UT Dean Keeton	3	160	73
UT West Mall	4	402	161
Museum	5	65	65
Capitol	6	48	34
Austin History Center	7	152	64
Republic Square	8	334	257
Vic Mathias/Auditorium Shores	9	82	68
South Congress	10	62	37
Oltorf	11	156	112
St. Edwards	12	107	34

Source: CapMetro 2023a.

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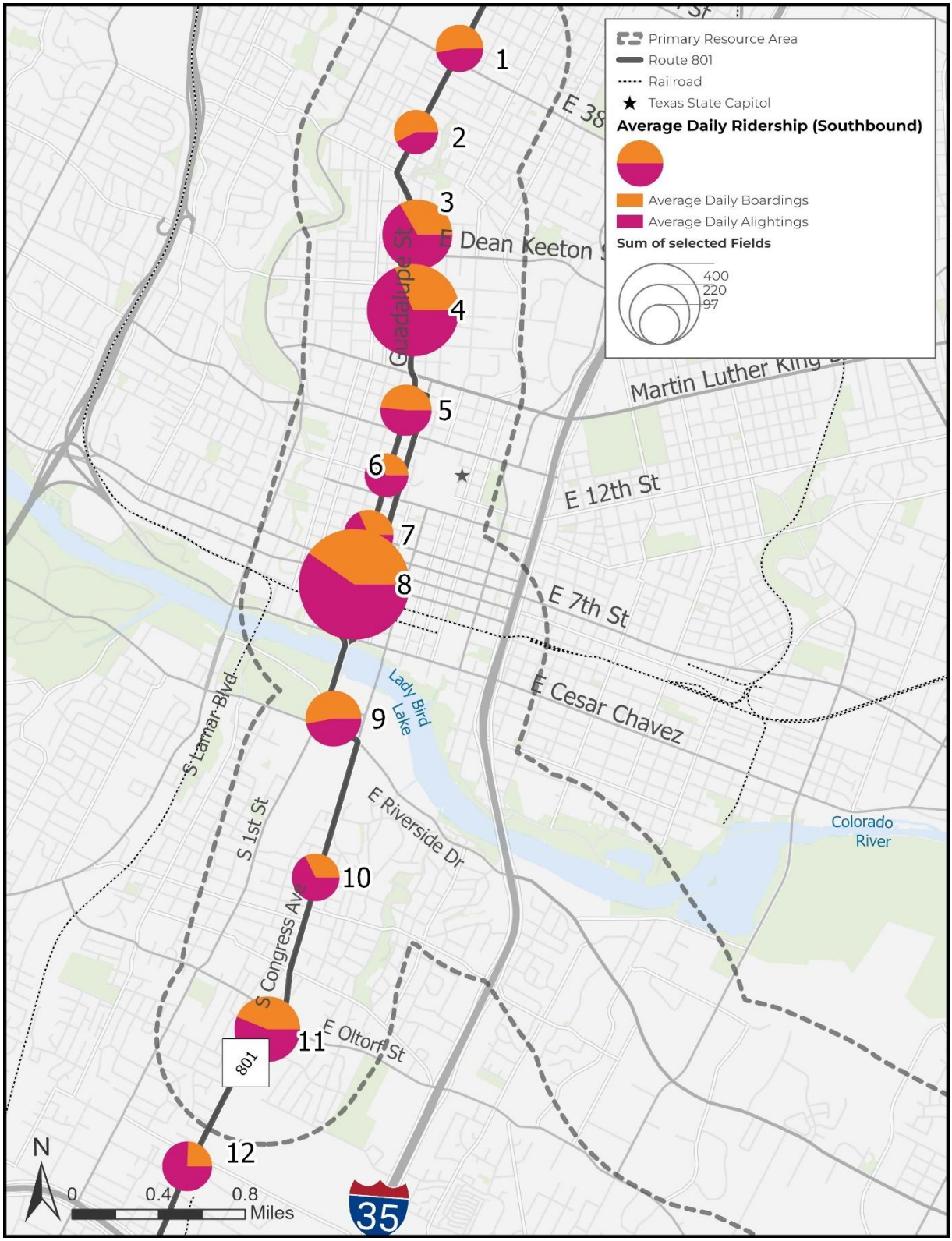
Figure 4-5: CapMetro Rapid Route 801 Ridership by Rapid Station, Southbound



Source: CapMetro 2023a.

Table 4-7: CapMetro Rapid Route 801 Ridership by Rapid Station, Spring 2023 (Southbound)

Station	Number (Figure 4-5)	Average Daily Boardings	Average Daily Alightings
Hyde Park	1	85	60
31st Street	2	58	45
UT Dean Keeton	3	82	195
UT West Mall	4	154	371
Museum	5	60	67
Capitol	6	31	57
Austin History Center	7	43	106
Republic Square	8	271	353
Vic Mathias/Auditorium Shores	9	70	76
South Congress	10	34	71
Oltorf	11	108	139
St. Edwards	12	32	98

Source: CapMetro 2023a.

4.3 Active Transportation

This section discusses the current bicycle and pedestrian facilities and associated environment along the Study Area. The existing active transportation network is discussed from north to south and west to east, beginning at 38th Street Station in the north to Oltorf Station in the south and to Yellow Jacket Station in the east. This includes Design Options where station location platforms are in unique locations for a station Design Option.

The existing signalized crossings, bicycle facilities, and sidewalk network for the Project corridor in the Study Area are described in the following sections.

4.3.1 Signalized Crossing Locations

Because the Project would be located along a key corridor connecting North and South Austin with Southeast Austin, and the majority of passengers would access the Project via biking, walking, or rolling, the ability to safely cross the corridor is an important element of the Project. Existing signalized crossing locations in the Study Area are shown in **Table 4-8**. The table also shows the current bicycle and pedestrian facilities providing access to the crossing approach as well as the planned future bicycle facilities. The south and east extents of the Project alignment tend to have fewer signalized crossing locations with bicycle facilities. Near UT and Downtown Austin, crossings with bicycle facilities are more prevalent. Based on the data reflected in the table below, 51 percent of existing crossing locations lack a bicycle facility on the approach

while 31 percent of crossings lack a sidewalk on at least one shared side of the approach. These percentages are calculated by finding the number of signalized crossings with bicycle and sidewalk facilities and dividing by the total number of signalized crossings.

Table 4-8: Existing Signalized Crossing Locations and Active Transportation Facilities

Build Alternative Roadway Name	Crossing Roadway Name	Existing Bicycle Facility Type[1]	Existing Sidewalk Provided? (Both Sides, One Side, None)[1]	Planned Bike Facility[2]
North Lamar Boulevard	Houston Street	None	One Side	None
North Lamar Boulevard	North Loop Boulevard	Protected Bike Lane (West), Bike Lane (East)	Both Sides	Protected Bike Lane (One Side)
North Lamar Boulevard	West 51st Street	None	Both Sides	None
North Lamar Boulevard	Guadalupe Street	None	Both Sides	Protected Bike Lane (One Side)
Guadalupe Street	North Lamar Boulevard	None	Both Sides	Protected Bike Lane (One Side on North), None (South)
Guadalupe Street	West 47th Street	None	Both Sides	None
Guadalupe Street	West 46th Street	Neighborhood Bikeway (West), Buffered Bike Lane (East)	Both Sides (West), One Side (East)	Neighborhood Bikeway (West), Protected Bike Lane (One Side on East)
Guadalupe Street	West 45th Street	None	Both Sides	None
Guadalupe Street	West 41st Street	None	Both Sides	Neighborhood Bikeway
Guadalupe Street	West 38th Street	Bike Lane (West), Bike Lane (One Side on East)	Both Sides	None
Guadalupe Street	West 34th Street	None	Both Sides (West), One Side (East)	Protected Bike Lane (One Side on West), Neighborhood Bikeway (East)

Build Alternative Roadway Name	Crossing Roadway Name	Existing Bicycle Facility Type[1]	Existing Sidewalk Provided? (Both Sides, One Side, None)[1]	Planned Bike Facility[2]
Guadalupe Street	West 31st Street	None	One Side	None
Guadalupe Street	West 30th Street	None	Both Sides	Neighborhood Bikeway
Guadalupe Street	West 29th Street	Buffered Bike Lane (West), Protected Bike Lane (East)	Both Sides	Protected Bike Lane (One Side on West), None (East)
Guadalupe Street	West 27th Street	Neighborhood Bikeway (West), Buffered Bike Lane (One Side on East)	Both Sides	Bike Lane (Contraflow on West), Neighborhood Bikeway (East)
Guadalupe Street	West 26th Street	None	Both Sides	None
Guadalupe Street	Dean Keeton Street	Buffered Bike Lane (One Side)	Both Sides	None (West), Protected Bike Lane (One Side on East)
Guadalupe Street	West 24th Street	None	Both Sides	None
Guadalupe Street	West Mall UT	None	Both Sides	None
Guadalupe Street	West 22nd Street	None	Both Sides	None
Guadalupe Street	West 21st Street	None	Both Sides	Protected Bike Lane
Guadalupe Street	MLK Boulevard	Bike Lane	Both Sides	None (West), Trail (East)
Guadalupe Street	West 17th Street	None	Both Sides	None
Guadalupe Street	West 15th Street	None	Both Sides	Protected Bike Lane (One Side)
Guadalupe Street	West 13th Street	None	Both Sides	None
Guadalupe Street	West 12th Street	None	Both Sides	Protected Bike Lane (One Side)

Build Alternative Roadway Name	Crossing Roadway Name	Existing Bicycle Facility Type[1]	Existing Sidewalk Provided? (Both Sides, One Side, None)[1]	Planned Bike Facility[2]
Guadalupe Street	West 11th Street	None (West), Bike Lane (East)	Both Sides	Protected Bike Lane (One Side)
Guadalupe Street	West 10th Street	None	Both Sides	None
Guadalupe Street	West 9th Street	None	Both Sides	Bike Lane
Guadalupe Street	West 8th Street	None	Both Sides	None
Guadalupe Street	West 7th Street	None	Both Sides	Neighborhood Bikeway (One Side on West), Protected Bike Lane (One Side on East)
Guadalupe Street	West 6th Street	None	Both Sides	To be decided
Guadalupe Street	West 5th Street	None	Both Sides	To be decided
Guadalupe Street	West 4th Street	None	Both Sides	Protected Bike Lane (One Side)
Guadalupe Street	West 3rd Street	Protected Bike Lane	Both Sides	Protected Bike Lane (One Side)
West 3rd Street	Lavaca Street	Buffered Bike Lane (South), Bike Lane (North)	Both Sides	Protected Bike Lane (One Side)
West 3rd Street	Colorado Street	None	Both Sides	None
West 3rd Street	Congress Avenue	Protected Bike Lane	Both Sides	Protected Bike Lane (One Side)
West 3rd Street	Brazos Street	None	Both Sides	None
West 3rd Street	San Jacinto Boulevard	Bike Lane	Both Sides	Protected Bike Lane (One Side)
Trinity Street	West 2nd Street	None	Both Sides	None

Build Alternative Roadway Name	Crossing Roadway Name	Existing Bicycle Facility Type[1]	Existing Sidewalk Provided? (Both Sides, One Side, None)[1]	Planned Bike Facility[2]
Trinity Street	West Cesar Chavez Street	None	Both Sides	None (West), Protected Bike Lane (One Side on East)
South Congress Avenue	Riverside Drive	None	Both Sides	Protected Bike Lane (One Side)
South Congress Avenue	Music Lane	None	None	None
South Congress Avenue	Nellie Street	None	One Side	Neighborhood Bikeway
South Congress Avenue	Academy Drive	None	Both Sides	None
South Congress Avenue	West James Street	None	Both Sides (West), One Side (East)	None
South Congress Avenue	West Gibson Drive	None	Both Sides (West), One Side (East)	None
South Congress Avenue	Elizabeth Street	None	Both Sides	None
South Congress Avenue	Monroe Street	None	Both Sides	None
South Congress Avenue	Milton Street	None	Both Sides	None
South Congress Avenue	Annie Street	None (West), Bike Lane (East)	One Side	None
South Congress Avenue	Mary Street	Bike Lane (West), None (East)	One Side (West), Both Sides (East)	Protected Bike Lane (West), Bike Lane (East)

Build Alternative Roadway Name	Crossing Roadway Name	Existing Bicycle Facility Type[1]	Existing Sidewalk Provided? (Both Sides, One Side, None)[1]	Planned Bike Facility[2]
South Congress Avenue	Leland Street	None	Both Sides	Bike Lane
South Congress Avenue	Live Oak Street	Bike Lane	One Side	Bike Lane (West), Protected Bike Lane (East)
South Congress Avenue	Oltorf Street	None	Both Sides	Protected Bike Lane (One Side)
South Congress Avenue	Cumberland Road	None	One Side	Bike Lane
South Congress Avenue	La Vista Street	None	None	None
South Congress Avenue	Coleman Street	None	One Side	None
South Congress Avenue	Woodward Street	Bike Lane (One Side on West), Protected Bike Lane (East)	Both Sides	Protected Bike Lane (One Side)
South Congress Avenue	Pickle Road	None	Both Sides (West), One Side (East)	None
South Congress Avenue	West Ben White Boulevard	None	Both Sides	None
East Riverside Drive	Alameda Drive	None	None	Neighborhood Bikeway
East Riverside Drive	Travis Heights Boulevard	None	None (North), One Side (South)	None (North), Protected Bike Lane (South)
East Riverside Drive	Interstate 35 (I-35) Frontage Road	Trail (North), None (South)	Both Sides	Trail

Build Alternative Roadway Name	Crossing Roadway Name	Existing Bicycle Facility Type[1]	Existing Sidewalk Provided? (Both Sides, One Side, None)[1]	Planned Bike Facility[2]
East Riverside Drive	Lakeshore Boulevard	Protected Bike Lane	Both Sides	Protected Bike Lane
East Riverside Drive	Parker Lane	Bike Lane (One Side on North), Bike Lane (One Side on South)	Both Sides (North), None (South)	Bike Lane (North), Protected Bike Lane (One Side on South)
East Riverside Drive	Royal Crest Drive	None	None (North), Both Sides (South)	None (North), Protected Bike Lane (South)
East Riverside Drive	Burton Drive / Tinnin Ford Road	Bike Lane (North), Protected Bike Lane (South)	Both Sides	Protected Bike Lane (One Side)
East Riverside Drive	Willow Creek Drive	None (North), Protected Bike Lane (South)	None (North), Both (South)	None (North), Protected Bike Lane (One Side on South)
East Riverside Drive	South Pleasant Valley Road	Buffered Bike Lane (One Side on North), Buffered Bike Lane (South)	Both Sides	Protected Bike Lane (One Side)
East Riverside Drive	Wickersham Road	Protected Bike Lane	Both Sides	Protected Bike Lane (North), Protected Bike Lane (One Side on South)
East Riverside Drive	Crossing Place	Protected Bike Lane	Both Sides	Bike Lane
East Riverside Drive	Faro Drive	None	Both Sides	Bike Lane
East Riverside Drive	Grove Boulevard	Protected Bike Lane (One Side on North), None (South)	Both Sides (North), One Side (South)	Protected Bike Lane (One Side)
East Riverside Drive	Montopolis Drive	None	Both Sides	Trail

Build Alternative Roadway Name	Crossing Roadway Name	Existing Bicycle Facility Type[1]	Existing Sidewalk Provided? (Both Sides, One Side, None)[1]	Planned Bike Facility[2]
East Riverside Drive	Coriander Drive	None	Both Sides (North), None (South)	None
East Riverside Drive	East Ben White Boulevard	None	Both Sides	None

Source: City of Austin 2023a.
[1] Google Street View, May 2024.
[2] *Austin Strategic Mobility Plan* Street Network Map (City of Austin 2023).

4.3.2 Bicycle Inventory

In the Study Area, which is 0.5-mile buffer around the Project and 1.5 miles around each proposed station, the OMF, each park-and-ride, and other proposed facilities, existing bicycle facilities were inventoried by facility type. **Table 4-9** details the miles of each facility type and the total miles of the bicycle facility. Similarly, **Table 4-10** details the proposed "All Ages and Abilities" bicycle facilities in the Study Area. Because some stations are within 1.5 miles of each other, the facilities within a station area may be included for nearby station areas as well. This may mean some bicycle facilities are counted in multiple station areas.

Urban trail facilities are the most common existing bicycle facility type, with approximately 40 total miles in the Study Area (including the proposed OMF). The Study Area also contains approximately 63 miles of bicycle lane facilities, for a total of approximately 103 miles of existing bicycle facilities.

The Wooldridge Square Station Design Option has the highest total miles of existing bicycle facilities, approximately 45 miles of facilities of all types. About 6 of these miles are protected facilities (separated from motor vehicle lanes and parking lanes with physical barriers), and about 20 miles are urban trail facilities. Yellow Jacket Station has the lowest total miles of existing facilities at about 5 miles. Stations north of Lady Bird Lake have an average of about 38 miles of bicycle facilities, while those stations south of Lady Bird Lake have an average of about 19 miles. Stations along the East Segment have low numbers of existing bicycle facility miles.

Table 4-9: Existing Bicycle Inventory in Miles

Stations and Facilities	Bike Lane (mi)	Protected Bikeway (mi)	Buffered Bike Lane (mi)	Trail (mi)	Total Mileage (mi)
38th Street (Build Alternative)	13.5	4.8	4.3	5.9	28.5
29th Street (Build Alternative)	13.1	4.8	5.5	7.2	30.6
UT (Build Alternative)	15.5	5.5	6.2	8.6	35.8
15th Street (Build Alternative)	13.6	6.4	5.7	17.3	43.0
Wooldridge Square (Design Option)	14.0	5.8	4.8	20.3	44.9
Congress (Build Alternative)	12.8	4.3	4.4	19.4	40.9
Cesar Chavez (Build Alternative and Design Option)	17.7	4.5	0.6	19.0	41.8
Waterfront (Build Alternative and Design Option)	12.2	3.9	4.2	19.5	39.8
SoCo (Build Alternative)	9.1	5.2	3.2	16.8	34.3
Oltorf (Build Alternative)	8.1	4.3	1.5	5.8	19.7
Travis Heights (Build Alternative)	9.8	5.2	3.9	18.9	37.8
Lakeshore (Build Alternative)	8.4	3.9	2.7	18.2	33.2
Pleasant Valley (Build Alternative)	6.2	3.7	2.1	16.0	28.0
Faro (Build Alternative)	4.0	4.1	2.1	12.0	22.2
Montopolis (Build Alternative)	2.5	0.9	0.5	7.4	11.3
Grove (Design Option)	3.0	1.2	1.2	10.3	15.7
Yellow Jacket (Build Alternative)	1.1	0.4	0.0	3.8	5.3
Operations and Maintenance Facility (Build Alternative)	0.6	0.4	0.0	4.6	5.6

Source: City of Austin 2023a.
Note: Table includes Build Alternative and Design Option stations. Some stations are within 1.5 miles of each other, resulting in overlapping areas and facilities across stations.

Table 4-10: Planned Bicycle Inventory in Miles

Stations and Facilities*	Bike Lane (mi)	Protected Bikeway (mi)	Buffered Bike Lane (mi)	Trail (mi)	Total Mileage (mi)
38th Street (Build Alternative)	7.6	33.0	8.9	9.1	58.6
29th Street (Build Alternative)	7.4	37.3	10.4	0.0	55.1
UT (Build Alternative)	8.1	44.2	9.6	11.0	72.9
15th Street (Build Alternative)	7.3	47.7	8.6	20.7	84.3
Wooldridge Square (Design Option)	7.7	46.4	7.4	22.5	84.0
Congress (Build Alternative)	10.9	42.2	5.8	20.2	79.1
Cesar Chavez (Build Alternative)	12.4	41.1	5.5	20.6	79.6
Waterfront (Build Alternative)	12.4	38.6	4.4	22.0	77.4
SoCo (Build Alternative)	9.8	30.3	3.2	21.6	64.9
Oltorf (Build Alternative)	8.5	22.1	3.9	13.8	48.3
Travis Heights (Build Alternative)	10.8	33.4	4.1	19.2	67.5
Lakeshore (Build Alternative)	10.0	23.9	3.2	15.7	52.8
Pleasant Valley (Build Alternative)	3.8	17.3	1.7	15.8	38.6
Faro (Build Alternative)	2.2	14.3	1.8	12.8	31.1
Montopolis (Build Alternative)	1.8	10.5	1.4	18.0	31.7
Grove (Design Option)	2.2	11.4	1.8	16.8	32.2
Yellow Jacket (Build Alternative)	2.2	7.7	1.9	17.1	28.9
Operations and Maintenance Facility (Build Alternative)	2.1	6.7	2.4	17.2	28.4

Source: City of Austin 2023a.
Note: Table includes Build Alternative and Design Option stations. Some stations are within 1.5 miles of each other, resulting in overlapping areas and facilities across stations.

Protected bicycle lanes have the highest total miles of planned facilities in proposed station areas at about 170 total miles. The Study Area also contains approximately 80 total miles of planned urban trails. In total, there are approximately 250 miles of planned bicycle facilities within the Study Area.

Error! Reference source not found. The 15th Street Station and Wooldridge Square Station have the highest number of total planned bicycle facilities, each with approximately 84 miles of planned bicycle facilities. Yellow Jacket Station and the OMF have the lowest number of total planned bicycle miles, with approximately 29 and 28 miles, respectively.

4.3.3 Sidewalk Inventory

In the Study Area, existing sidewalk facilities are less connected along the southern and eastern portions of the Project corridor when compared to the northern portion. Substantial gaps can be found surrounding SoCo Station and Travis Heights Station. The 38th Street Station also has a substantial percentage of missing sidewalk coverage at approximately 47 percent. On average, sidewalk coverage within the Study Area is about 23 percent incomplete. **Table 4-11** shows sidewalk inventory in miles and missing sidewalk coverage within the Study Area, calculated by dividing the miles of missing sidewalk (planned and potential) by the total miles of all types of sidewalk facilities. Because some stations are within 1.5 miles of each other, the facilities within a station area may be included for nearby station areas as well. This may mean some sidewalk facilities are counted in multiple station areas.

Table 4-11: Sidewalk Inventory in Miles

Stations and Facilities*	Sidewalk Gaps (mi)	Existing Sidewalk + Driveway (mi)	Percent Missing Sidewalk Coverage
38th Street (Build Alternative)	100.4	111.6	47.4
29th Street (Build Alternative)	90.0	131.2	40.7
UT (Build Alternative)	73.8	155.4	32.2
15th Street (Build Alternative)	58.0	159.2	26.7
Wooldridge Square (Design Option)	61.5	165.8	27.1
Congress (Build Alternative)	60.4	144.9	29.4
Cesar Chavez (Build Alternative)	60.9	146.4	29.4
Waterfront (Build Alternative)	70.9	132.9	34.8
SoCo (Build Alternative)	87.1	94.2	48.0
Oltorf (Build Alternative)	84.2	79.2	51.5
Travis Heights (Build Alternative)	68.9	114.9	37.2
Lakeshore (Build Alternative)	60.6	93.4	39.4
Pleasant Valley (Build Alternative)	35.2	66.5	34.6
Faro (Build Alternative)	19.1	63.3	23.2
Montopolis (Build Alternative)	18.1	59.9	23.2
Grove (Design Option)	23.5	67.4	25.9
Yellow Jacket (Build Alternative)	27.6	50.8	35.2
Operations and Maintenance Facility (Build Alternative)	35.7	45.6	43.9
Total	**93.1**	**265.1**	

Source: City of Austin 2023a.
Note: Table includes Build Alternative and Design Option stations. Some stations are within 1.5 miles of each other, resulting in overlapping areas and facilities across stations.

Stations closest to Downtown Austin, Wooldridge Square Station, and 15th Street Station have the greatest amount of existing sidewalk facilities. Similar to the bicycle facilities findings, stations along the East Segment have the least amount of existing sidewalk coverage.

4.4 Traffic

The Study Area is served by an established roadway network consisting of Level 0 to Level 5 streets, as identified by the City's Transportation Criteria Manual. The existing roadway system and traffic conditions in the Study Area are detailed in the following sections.

4.4.1 Existing Roadway Network and Characteristics

The following sections detail existing roadway infrastructure and their influence in the traffic Study Area.

4.4.1.1 Existing Highway Network

The following three highways are near various segments of the Project corridor:

- **Interstate 35 (I-35)** crosses the Project alignment at East Riverside Drive. I-35 provides roadway users accessibility to several major east-west corridors that intersect the Study Area.
- **US 183** provides a direct connection to I-35 and intersects North Lamar Boulevard about 3 miles north of the proposed 38th Street Station at the northern end of the Project alignment. Toward the south, US 183 provides access to Yellow Jacket Station (located approximately 1 mile west) via SH 71 and the OMF at Airport Commerce Drive (located within 0.5 mile). US 183 provides connections to growing municipalities northwest of Austin as well as connectivity to East Austin and Austin-Bergstrom International Airport.
- **U.S. Highway 290 / State Highway 71 (SH 71)** intersects South Congress Avenue about 1.2 miles south of the proposed Oltorf Station at the southern end of the Project alignment. It also intersects East Riverside Drive about 0.2 mile east of the proposed Yellow Jacket Station at the eastern end of the Project alignment. This roadway provides regional highway access from locations east and west of Austin and provides connectivity to Austin-Bergstrom International Airport.

All three highways experience considerable congestion at peak travel periods and can also experience poor level of service during times beyond traditional peak travel hours.

4.4.1.2 Existing Roadway Network

Due to its size and location, the Study Area contains some of the most highly traveled roads in Austin. These roadways help move traffic among neighborhoods and through Austin, and they provide direct access to adjacent parcels. Throughout the corridor, the Project alignment runs along several arterial roadways including South Congress Avenue and Guadalupe Street, which provide critical north-south connectivity. East Riverside Drive is one of the main arterial roadways in the Study Area that provides critical east-west connectivity. High population and employment densities in the Study Area (e.g., Guadalupe Street near UT [the Drag], Downtown

Austin, and the South Congress Business District) produce large volumes of trips, which typically result in high levels of congestion during peak-hour travel. Out of 83 intersections analyzed as part of this study, 26 intersections fail in AM peak and 66 intersections fail in PM peak for the No Build Alternative.

4.4.1.3 Roadway Classifications

Roadway classifications serve to define a roadway's function, size, and capacity. It is important to identify roadway classifications in and surrounding the traffic Study Area to provide a general understanding of typical traffic flow in the corridor. The City roadway classifications include the following designations and characteristics per Austin's Transportation Criteria Manual, which all exist in the Study Area:

- **Level 5 Streets.** Level 5 streets are primarily controlled access streets (freeways and expressways). These streets are multilane roadways meant for higher speeds and longer distance travel. They carry traffic through the region and into and out of Austin.
- **Level 4 Streets.** Level 4 streets accommodate travel into and out of Austin from the surrounding area. They are often multilane thoroughfares that generally include a landscaped median and freeway and interstate frontage roads. They provide strong commuter linkages and tend to prioritize vehicular capacity.
- **Level 3 Streets.** Level 3 streets have a greater role in balancing local land access with moving people and goods. They typically have lower travel speeds and traffic volumes than Level 4 streets. They also tend to be limited in width by the built environment that they serve and often have the greatest need for accommodation of high levels of use for all travel modes.
- **Level 2 Streets.** Level 2 streets connect neighborhoods to each other. They balance mobility with access by providing good access to neighborhood-serving business districts, retail, and services. They typically have lower travel speeds and traffic volumes than Level 3 and 4 streets, and they tend to connect to other Level 2, 3, and 4 streets.
- **Level 1 Street.** Level 1 streets serve primarily residential destinations, typically with no retail or mixed use. In some examples, the street may be a shared street or operate with a yield condition. Their primary purpose is to provide block-level local access and provide connectivity to higher level streets.
- **Level 0.** Level 0 is reserved for alleys. These streets typically provide service vehicle and/or residential access.

The City design criteria for roadway classifications, as well as relevant Study Area roadways, are summarized in **Table 4-12**. Listed design criteria represent ranges of roadway classification subcategories; for example, collector criteria provide ranges for the five collector subgroups. Freeway, parkway, and local roadway classifications were omitted because design criteria for the former two classifications were limited in the Transportation Criteria Manual and the latter would typically not have effects on the Study Area.

Table 4-12: City Roadway Classification Criteria

Roadway Classification	Design Criteria
Level 3	ROW: 80 to 116 feet Target Speed (miles per hour): 25 to 35 Intersection Spacing (feet): 600 to 700
Level 2	ROW: 72 to 84 feet Target Speed (miles per hour): 20 to 30

Source: City of Austin Transportation Criteria Manual.

4.4.1.4 Key Roadway Characteristics

Lane configurations along the corridor's key roadways—Guadalupe Street, Lavaca Street, South Congress Avenue, and East Riverside Drive—are summarized below:

- Guadalupe Street is a Level 3 street with two travel lanes running in each direction for most of the Study Area and four one-way southbound lanes between MLK Boulevard and West Cesar Chavez Street, with one serving as a transit priority lane. The roadway has a two-way left-turn lane (i.e., a center lane that allows vehicles to make left turns in either direction) between 38th Street and 29th Street and exclusive left-turn lanes at intersections north of Dean Keeton Street. Northbound left-turn lanes are prohibited between 26th and 21st Streets, and southbound left-turn lanes are prohibited between 25th and 22nd Streets. Guadalupe Street contains transit priority lanes through the downtown area. Northbound and southbound bicycle lanes exist throughout most of the corridor, with typical sidewalk widths ranging from 7 to 15 feet. Because of the arterial's surrounding land uses (e.g., the Drag, Downtown Austin), parallel parking exists along most of the roadway.
- Lavaca Street is a Level 3 street that runs through downtown that forms a one-way northbound couplet with southbound Guadalupe Street between Cesar Chavez Street and MLK Boulevard. Lavaca Street has four northbound travel lanes, with one lane serving as a transit priority lane. Northbound bicycle lanes exist on Lavaca Street throughout the Study Area, with typical sidewalk widths ranging from 7 to 15 feet. Because of the arterial's surrounding land uses (e.g., the Drag, Downtown Austin), parallel parking exists along most of the roadway.
- South Congress Avenue is a Level 3 street with two travel lanes running in each direction and a two-way left-turn lane for most of the Study Area. Exclusive left-turn lanes are present at all signalized intersections, and exclusive right-turn lanes are present at intersections with major roadways. South Congress Avenue has northbound and southbound bicycle lanes in most of the Study Area, with constrained sections shared with vehicle lanes. Sidewalks ranging from 7 to 15 feet wide and parallel and angled parking are adjacent to the roadway in the South Congress Business District.

- East Riverside Drive is a Level 3 street that varies in ROW width and lane configuration by segment and includes exclusive left-turn lanes at most signalized intersections. West of I-35, the arterial has two travel lanes running in each direction and a landscaped center median that prevents left turns except at intersections and from the two-way left-turn lane between South Congress Avenue and Newning Avenue. East of I-35, the roadway opens up to three lanes in each direction between I-35 and Summit Street. East of I-35 between Summit Street and Grove Boulevard, the arterial has three lanes in each direction, including a transit priority lane, and exclusive left-turn lanes at most intersections. The center median of East Riverside Drive widens between Willow Creek Drive and Wickersham Lane, with both directions of traffic separated by as much as 225 feet at the intersection with Pleasant Valley Road. East of Grove Boulevard, East Riverside Drive is composed of three lanes in each direction. Between SH 71 and US 183 near Austin-Bergstrom International Airport, the roadway has two lanes in each direction and a two-way left-turn lane. Typical sidewalk widths range from 5 to 10 feet throughout the Study Area.

4.5 Parking

The 2019 Downtown Austin Parking Strategy documented 71,504 parking spaces within the Downtown Austin planning area—including 65,099 off-street spaces and 6,405 on-street spaces (Downtown Austin Alliance 2019). Since the 2019 document was released, new development and street configuration changes have reduced the on-street parking supply downtown to approximately 5,300 spaces, and efforts are ongoing to manage existing parking better to create more shared parking in lieu of building new parking as Downtown Austin continues to develop with housing, retail, and office. The 2019 South Congress Parking Strategy found that there were 5,372 parking spaces within the South Congress study area (generally from 1st Street to Brackenridge Street and West Live Oak Street to West Riverside Drive) (City of Austin and Downtown Austin Alliance 2019).

The Project team identified the on-street parking supply in the parking Study Area by combining field surveys and desktop surveys using the latest Google Street View imagery, Austin parking GIS data, and data provided by the City that is accurate as of April 3, 2024.

The Project team conducted field surveys along the Drag, Downtown Austin, and the South Congress Business District to identify existing on-street parking and utilization. The on-street parking occupancy rates provide a snapshot of possible on-street parking use along the corridor. The team collected occupancy data for these segments over 3 days: Tuesday through Thursday, October 10–12, 2023. A key takeaway from the occupancy data analysis is that the on-street parking network was used at nearly the same rate (59 percent) during the midday period as during the PM peak hour (58 percent).

A desktop-level analysis using the most recent Google Street View imagery identified on-street parking spaces along Guadalupe Street (between 38th Street and Cesar Chavez Street), Lavaca Street (between MLK Boulevard and Cesar Chavez Street), and South Congress Avenue (between Riverside Drive and Oltorf Street). Although it is part of the Project, there is no on-street parking on East Riverside Drive between South Congress Avenue and Airport Commerce Drive. A breakdown of on-street parking for the Study Area is shown in the sections below. A

total of 86 on-street parking spaces were observed along the Drag. This analysis looks at overall parking spaces that would be affected without distinguishing the type of parking space. As a result, some of the affected parking spaces are dedicated to valet, commercial loading, Americans with Disabilities Act compliance, and other uses. A breakdown of the on-street parking supply in the area is described in **Table 4-13**. All vehicle spots in this area are potentially affected.

Table 4-13: On-Street Parking Supply – The Drag

Roadway	Block	Side of Street	Number of Vehicle Spots
Guadalupe Street	Maiden – 34th Street	East	5
Guadalupe Street	Dean Keeton – 25th Street	West	6
Guadalupe Street	25th Street – 24th Street	West	11
Guadalupe Street	24th Street – 23rd Street	West	19
Guadalupe Street	23rd Street – 22nd Street	West	9
Guadalupe Street	22nd Street – 21st Street	West	12
Guadalupe Street	21st Street – 20th Street	West	10
Guadalupe Street	21st Street – 20th Street	East	1
Guadalupe Street	20th Street – MLK Boulevard	West	5
Guadalupe Street	MLK Boulevard – 17th Street	East	6
Guadalupe Street	17th Street – 15th Street	East	2
		Total	**86**

Occupancy rates for the Drag are shown in **Table 4-14** and **Table 4-15**. Parking space occupancy rates were analyzed during field visits for midday and PM peak period in this segment. The overall occupancy in the Drag is the highest of the three areas analyzed. Use of on-street parking spaces was 91 percent during the midday and 69 percent during the PM peak, although some blocks are more efficiently used in both periods of data collection than others. In the midday period, five blocks in the Drag experienced functionally full parking conditions, which may contribute to vehicles “circling” for parking and causing delay and vehicular congestion.

Table 4-14: On-Street Parking Midday Occupancy – The Drag[1]

Roadway	Block	Side of Street	Vehicle Spots Occupied	Occupancy Rate[2] (%)
Guadalupe Street	Maiden – 34th Street	East	0	0
Guadalupe Street	Dean Keeton – 25th Street	West	5	83
Guadalupe Street	25th Street – 24th Street	West	12	109
Guadalupe Street	24th Street – 23rd Street	West	19	100
Guadalupe Street	23rd Street – 22nd Street	West	8	89
Guadalupe Street	22nd Street – 21st Street	West	12	100
Guadalupe Street	21st Street – 20th Street	West	8	80
Guadalupe Street	21st Street – 20th Street	East	2	200
Guadalupe Street	20th Street – MLK Boulevard	West	5	100
Guadalupe Street	MLK Boulevard – 17th Street	East	5	83
Guadalupe Street	17th Street – 15th Street	East	2	100
		Total	**78**	

[1] Miday = 12:00–1:00 p.m.
[2] Parking capacity is estimated. Occupancies may exceed 100 percent due to motorcycles or other small vehicles consuming less capacity than anticipated.

Table 4-15: On-Street Parking PM Peak Occupancy – The Drag

Roadway	Block	Side of Street	Vehicle Spots Occupied	Occupancy Rate (%)
Guadalupe Street	Maiden – 34th Street	East	0	0
Guadalupe Street	Dean Keeton – 25th Street	West	4	67
Guadalupe Street	25th Street – 24th Street	West	11	100
Guadalupe Street	24th Street – 23rd Street	West	19	100
Guadalupe Street	23rd Street – 22nd Street	West	8	89
Guadalupe Street	22nd Street – 21st Street	West	7	58
Guadalupe Street	21st Street – 20th Street	West	2	20
Guadalupe Street	21st Street – 20th Street	East	1	100
Guadalupe Street	20th Street – MLK Boulevard	East	3	60
Guadalupe Street	MLK Boulevard – 17th Street	West	4	67
Guadalupe Street	17th Street – 15th Street	East	0	0
		Total	**59**	

[1] PM peak = 4:00–5:00 p.m.

Table 4-16 presents on-street parking supply data for the Project in Downtown Austin on Guadalupe Street from 13th Street to 3rd Street, on 3rd Street from Guadalupe Street to Trinity Street, and on Trinity Street from 4th Street to Lady Bird Lake. There are 186 on-street parking spaces along the Project alignment in Downtown Austin. Due to the new proposed curb line and roadway restriping, parking availability on Lavaca Street would be reduced in addition to the spaces affected along the Project alignment. These affected areas are shown in **Table 4-17**.

Table 4-16: On-Street Parking Supply – Downtown Austin

Roadway	Block	Side of Street	Number of Vehicle Spots
Guadalupe Street	13th Street – 12th Street	East	12
Guadalupe Street	12th Street – 11th Street	East	13
Guadalupe Street	11th Street – 10th Street	East	10
Guadalupe Street	10th Street – 9th Street	East	5
Guadalupe Street	9th Street – 8th Street	East	4
Guadalupe Street	8th Street – 7th Street	East	12
Guadalupe Street	7th Street – 6th Street	East	6
Guadalupe Street	6th Street – 5th Street	East	0
Guadalupe Street	5th Street – 4th Street	East	0
4th Street	Guadalupe Street – Lavaca Street	South	12
Guadalupe Street	4th Street – 3rd Street	East	0
3rd Street	Guadalupe Street – Lavaca Street	North	7
3rd Street	Guadalupe Street – Lavaca Street	South	2
3rd Street	Lavaca Street – Colorado Street	South	12
Colorado Street	3rd Street – 2nd Street	East	11
3rd Street	Colorado Street – Congress Street	South	13
3rd Street	Congress Street – Brazos Street	South	7
3rd Street	Brazos Street – San Jacinto	South	11
3rd Street	San Jacinto – Trinity	South	6
Trinity Street	3rd Street – 2nd Street	West	8
Trinity Street	2nd Street – Cesar Chavez Street	West	8
Trinity Street	1st Street – End Street	West	7
Trinity Street	1st Street – End Street	East	20
		Total	**186**

Table 4-17: Potentially Affected Parking Supply – Downtown Austin

Roadway	Block	Side of Street	Number of Vehicle Spots
16th Street	Guadalupe Street – Lavaca Street	North	1
16th Street	Guadalupe Street – Lavaca Street	South	1
16th Street	Lavaca Street – Colorado Street	North	2
15th Street	Guadalupe Street – Lavaca Street	North	0
14th Street	Guadalupe Street – Lavaca Street	North	1
14th Street	Lavaca Street – Colorado Street	South	2
13th Street	Guadalupe Street – Lavaca Street	South	1
13th Street	Lavaca Street – Colorado Street	North	1
13th Street	Lavaca Street – Colorado Street	South	2
12th Street	Lavaca Street – Colorado Street	North	1
12th Street	Lavaca Street – Colorado Street	South	1
11th Street	Guadalupe Street – Lavaca Street	South	2
11th Street	Lavaca Street – Colorado Street	North	2
Guadalupe Street	11th Street – 10th Street	East	12
10th Street	Guadalupe Street – Lavaca Street	South	1
10th Street	Lavaca Street – Colorado Street	North	1
9th Street	Lavaca Street – Colorado Street	South	2
8th Street	Lavaca Street – Colorado Street	North	1
8th Street	Lavaca Street – Colorado Street	South	2
7th Street	Lavaca Street – Colorado Street	South	2
6th Street	Lavaca Street – Colorado Street	South	0
5th Street	Lavaca Street – Colorado Street	South	0
4th Street	Guadalupe Street – Lavaca Street	North	2
Colorado Street	4th Street – 3rd Street	East	1
Colorado Street	3rd Street – 2nd Street	West	2
Congress Avenue	3rd Street – 2nd Street	East	1
San Jacinto	4th Street – 3rd Street	East	2
San Jacinto	4th Street – 3rd Street	West	1
San Jacinto	3rd Street – 2nd Street	West	1
San Jacinto	3rd Street – 2nd Street	East	2

Roadway	Block	Side of Street	Number of Vehicle Spots
Lavaca Street	Cesar Chavez Street – 2nd Street	West	3
Lavaca Street	2nd Street – 3rd Street	West	5
Lavaca Street	4th Street—5th Street	West	2
Lavaca Street	5th Street—6th Street	West	5
Lavaca Street	6th Street—7th Street	West	3
Lavaca Street	7th Street – 8th Street	West	11
Lavaca Street	8th Street – 9th Street	West	4
Lavaca Street	9th street – 10th Street	West	6
Lavaca Street	10th street – 11th Street	East	10
Lavaca Street	10th street – 11th Street	West	4
Lavaca Street	11th Street – 12th street	West	4
Lavaca Street	12th Street – 13th Street	West	6
Lavaca Street	13th Street – 14th Street	West	7
Lavaca Street	14th Street – 15th Street	West	6
Lavaca Street	15th Street – 16th Street	West	7
Lavaca Street	16th Street – 17th Street	West	9
Lavaca Street	17th Street – 18th Street	West	8
Lavaca Street	18th Street – MLK Boulevard	West	13
		Total	**163**

Error! Not a valid bookmark self-reference. and **Table 4-19** document occupancy rates collected in Downtown Austin during midday and PM peak periods, respectively. This segment had the lowest midday occupancy rate (50 percent) and the lowest PM peak occupancy rate (35 percent). The high volume of activity in the downtown area during business hours may explain this decline in parking occupancy during the PM peak. Additionally, the effect on those trying to park downtown during the PM peak is likely to be less than the effect during the midday peak. Parking use for additional areas not along the Project alignment, including 4th Street and Nueces Street, is needed in future design phases. During the field review on October 10 and 11, 2023, parking use on Lavaca Street between 4th Street and MLK Boulevard was reviewed during the midday and PM peak. These findings are shown in **Table 4-20** and **Table 4-21**. The occupancy rate for both midday and the PM peak are higher than other Downtown Austin parking segments, 77 percent and 43 percent, respectively.

Table 4-18: On-Street Parking Midday Occupancy – Downtown Austin[1]

Roadway	Block	Side of Street	Vehicle Spots Occupied	Occupancy Rate[2] (%)
Guadalupe Street	13th Street – 12th Street	East	9	75
Guadalupe Street	12th Street – 11th Street	East	11	85
Guadalupe Street	11th Street – 10th Street	East	6	60
Guadalupe Street	10th Street – 9th Street	East	1	20
Guadalupe Street	9th Street – 8th Street	East	1	25
Guadalupe Street	8th Street – 7th Street	East	-	-
Guadalupe Street	7th Street – 6th Street	East	-	-
Guadalupe Street	6th Street – 5th Street	East	-	-
Guadalupe Street	5th Street – 4th Street	East	-	-
Guadalupe Street	4th Street – 3rd Street	East	-	-
3rd Street	Guadalupe Street – Lavaca Street	North	0	0
3rd Street	Guadalupe Street – Lavaca Street	South	0	0
3rd Street	Lavaca Street – Colorado Street	South	8	75
3rd Street	Colorado Street – Congress Avenue	South	12	92
3rd Street	Congress Avenue – Brazos Street	South	6	86
3rd Street	Brazos Street – San Jacinto Blvd	South	1	Valet[3]
3rd Street	San Jacinto Blvd – Trinity Street	South	3	50
Trinity Street	3rd Street – 2nd Street	West	7	88
Trinity Street	2nd Street – 1st Street	West	6	75
Trinity Street	1st Street – End Street	East	14	70
Trinity Street	1st Street – End Street	West	8	114
		Total	**93**	

[1] Midday = 11:00 a.m. – 1:00 p.m.
[2] Parking capacity is estimated. Occupancies may exceed 100 percent due to motorcycles or other small vehicles consuming less capacity than anticipated.
[3] Construction is occurring in this location, but valet parking was still present during observation.

Table 4-19: On-Street Parking PM Peak Occupancy – Downtown Austin[1]

Roadway	Block	Side of Street	Vehicle Spots Occupied	Occupancy Rate (%)
Guadalupe Street	13th Street – 12th Street	East	5	42
Guadalupe Street	12th Street – 11th Street	East	3	23
Guadalupe Street	11th Street – 10th Street	East	0	0
Guadalupe Street	10th Street – 9th Street	East	0	0
Guadalupe Street	9th Street – 8th Street	East	0	0
Guadalupe Street	8th Street – 7th Street	East	-	-
Guadalupe Street	7th Street – 6th Street	East	-	-
Guadalupe Street	6th Street – 5th Street	East	-	-
Guadalupe Street	5th Street – 4th Street	East	-	-
Guadalupe Street	4th Street – 3rd Street	East	-	-
3rd Street	Guadalupe Street – Lavaca Street	North	0	0
3rd Street	Guadalupe Street – Lavaca Street	South	0	0
3rd Street	Lavaca Street – Colorado Street	South	9	75
3rd Street	Colorado Street – Congress Avenue	South	9	82
3rd Street	Congress Avenue – Brazos Street	South	7	100
3rd Street	Brazos Street – San Jacinto Blvd	South	3	Valet[2]
3rd Street	San Jacinto Blvd – Trinity Street	South	3	50
Trinity Street	3rd Street – 2nd Street	West	0	0
Trinity Street	2nd Street – 1st Street	West	8	100
Trinity Street	1st Street – End Street	West	7	100
Trinity Street	1st Street – End Street	East	15	75
		Total	**69**	

[1] PM peak = 4:30–5:30 p.m.
[2] Construction is occurring in this location, but valet parking was still present during observation.

Table 4-20: On-Street Parking Midday Occupancy – Lavaca Street

Roadway	Block	Side of Street	Total Number of Spots	Vehicle Spots Occupied	Occupancy Rate[1]
Lavaca Street	18th Street – MLK Boulevard	West	13	11	85
Lavaca Street	17th Street – 18th Street	West	11	10	91
Lavaca Street	16th Street—17th Street	West	9	7	78
Lavaca Street	15th Street – 16th Street	West	7	4	57
Lavaca Street	14th Street – 15th Street	West	6	6	100
Lavaca Street	13th Street – 14th Street	West	7	7	100
Lavaca Street	12th Street – 13th Street	West	6	6	100
Lavaca Street	11th Street – 12th street	West	6	6	100
Lavaca Street	10th Street – 11th Street	West	4	1	25
Lavaca Street	10th Street – 11th Street	East	10	7	70
Lavaca Street	9th Street – 10th Street	West	6	0	0
Lavaca Street	8th Street – 9th Street	West	5	3	60
Lavaca Street	7th Street– 6th Street	West	11	7	64
Lavaca Street	6th Street—7th Street	West	3	4	133
Lavaca Street	5th Street—6th Street	West	5	5	100
Lavaca Street	4th Street—5th Street	West	2	2	100
		Total	**111**	**86**	

[1] Parking capacity is estimated. Occupancies may exceed 100 percent due to motorcycles or other small vehicles consuming less capacity than anticipated.

Table 4-21: On-Street Parking PM Peak Occupancy – Lavaca Street

Roadway	Block	Side of Street	Total Number of Spots	Vehicle Spots Occupied	Occupancy Rate[1]
Lavaca Street	18th Street – MLK Boulevard	West	13	10	77
Lavaca Street	17th Street – 18th Street	West	11	7	64
Lavaca Street	16th Street—17th Street	West	9	8	89
Lavaca Street	15th Street – 16th Street	West	7	1	14
Lavaca Street	14th Street – 15th Street	West	6	6	100
Lavaca Street	13th Street – 14th Street	West	7	0	0
Lavaca Street	12th Street – 13th Street	West	6	0	0
Lavaca Street	11th Street – 12th Street	West	6	2	33
Lavaca Street	10th street – 11th Street	West	4	3	75
Lavaca Street	10th Street – 11th Street	East	10	0	0
Lavaca Street	9th Street – 10th Street	West	6	0	0
Lavaca Street	8th Street – 9th Street	West	5	1	20
Lavaca Street	7th Street – 8th Street	West	11	2	18
Lavaca Street	6th Street—7th Street	West	3	4	133
Lavaca Street	5th Street—6th Street	West	5	3	60
Lavaca Street	4th Street—5th Street	West	2	1	50
		Total	**111**	**48**	

[1] Parking capacity is estimated. Occupancies may exceed 100 percent due to motorcycles or other small vehicles consuming less capacity than anticipated.

Table 4-22 shows the on-street parking supply along South Congress Avenue as observed on October 10 and 11, 2023. These data do not account for recent 2024 changes in parking regulations in the South Congress Business District area. All vehicle spots in this area are potentially affected. Occupancy rates, gathered from field surveys conducted during midday and PM peak periods, are documented in **Table 4-23** and **Table 4-24**, respectively. Unlike other surveyed areas, the midday occupancy rate (56 percent) was lower than the PM peak occupancy rate (68 percent). Neighborhood streets surrounding this segment of the corridor

include streets with free parking and streets that have resident-only restrictions. The Build Alternative (shown in **DEIS Appendix C**) shows "flex zones" labels in areas where parking spaces, delivery zones, autonomous vehicle drop-off points, or trees could be included in later design phases. For the purposes of this assessment, the proposed flex zones were not considered to include parking.

Table 4-22: On-Street Parking Supply – South Congress Business District

Roadway	Block	Side of Street	Number of Vehicle Spots
South Congress Avenue	Texas School for the Deaf	West	61
South Congress Avenue	Texas School for the Deaf	East	31
South Congress Avenue	Nellie Street – James Street	West	18
South Congress Avenue	Nellie Street – James Street	East	7
South Congress Avenue	James Street – Gibson Street	West	18
South Congress Avenue	James Street – Gibson Street	East	20
South Congress Avenue	Gibson Street – Elizabeth Street	West	19
South Congress Avenue	Gibson Street – Elizabeth Street	East	14
South Congress Avenue	Elizabeth Street – Monroe Street	West	16
South Congress Avenue	Elizabeth Street – Monroe Street	East	16
South Congress Avenue	Monroe Street – Milton Street	West	19
South Congress Avenue	Monroe Street – Milton Street	East	5
South Congress Avenue	Milton Street – Annie Street	West	19
South Congress Avenue	Milton Street – Annie Street	East	11
South Congress Avenue	Annie Street – Mary Street	West	7
South Congress Avenue	Annie Street – Mary Street	East	5
South Congress Avenue	Mary Street – Crockett Street	West	11
South Congress Avenue	Mary Street – Crockett Street	East	43
South Congress Avenue	Crockett Street – Live Oak Street	West	9
South Congress Avenue	Leland Street – Live Oak Street	East	9
		Total	**358**

Table 4-23: On-Street Parking Midday Occupancy – South Congress Business District[1]

Roadway	Block	Side of Street	Vehicle Spots Occupied	Occupancy Rate[2] (%)
South Congress Avenue	Texas School for the Deaf	West	33	54
South Congress Avenue	Texas School for the Deaf	East	26	84
South Congress Avenue	Nellie Street – James Street	West	13	72
South Congress Avenue	Nellie Street – James Street	East	7	100
South Congress Avenue	James Street – Gibson Street	West	15	83
South Congress Avenue	James Street – Gibson Street	East	21	105
South Congress Avenue	Gibson Street – Elizabeth Street	West	8	42
South Congress Avenue	Gibson Street – Elizabeth Street	East	12	86
South Congress Avenue	Elizabeth Street – Monroe Street	West	12	75
South Congress Avenue	Elizabeth Street – Monroe Street	East	14	88
South Congress Avenue	Monroe Street – Milton Street	West	7	37
South Congress Avenue	Monroe Street – Milton Street	East	2	40
South Congress Avenue	Milton Street – Annie Street	West	7	37
South Congress Avenue	Milton Street – Annie Street	East	8	73
South Congress Avenue	Annie Street – Mary Street	West	4	57
South Congress Avenue	Annie Street – Mary Street	East	0	0
South Congress Avenue	Mary Street – Crockett Street	West	4	36
South Congress Avenue	Mary Street – Crockett Street	East	3	7
South Congress Avenue	Crockett Street – Live Oak Street	West	5	56
South Congress Avenue	Crockett Street – Live Oak Street	East	-	-
		Total	**201**	

[1] Miday = 12:00–1:00 p.m.
[2] Parking capacity is estimated. Occupancies may exceed 100 percent due to motorcycles or other small vehicles consuming less capacity than anticipated.

Table 4-24: On-Street Parking PM Peak Occupancy – South Congress Business District[1]

Roadway	Block	Side of Street	Vehicle Spots Occupied	Occupancy Rate[2] (%)
South Congress Avenue	Texas School for the Deaf	West	52	85
South Congress Avenue	Texas School for the Deaf	East	24	77
South Congress Avenue	Nellie Street – James Street	West	13	72
South Congress Avenue	Nellie Street – James Street	East	6	86
South Congress Avenue	James Street – Gibson Street	West	15	83
South Congress Avenue	James Street – Gibson Street	East	20	100
South Congress Avenue	Gibson Street – Elizabeth Street	West	13	68
South Congress Avenue	Gibson Street – Elizabeth Street	East	14	100
South Congress Avenue	Elizabeth Street – Monroe Street	West	13	81
South Congress Avenue	Elizabeth Street – Monroe Street	East	14	88
South Congress Avenue	Monroe Street – Milton Street	West	16	84
South Congress Avenue	Monroe Street – Milton Street	East	0	0
South Congress Avenue	Milton Street – Annie Street	West	11	58
South Congress Avenue	Milton Street – Annie Street	East	10	91
South Congress Avenue	Annie Street – Mary Street	West	4	57
South Congress Avenue	Annie Street – Mary Street	East	0	0
South Congress Avenue	Mary Street – Crockett Street	West	13	118
South Congress Avenue	Mary Street – Crockett Street	East	2	5
South Congress Avenue	Crockett Street – Live Oak Street	West	3	33
South Congress Avenue	Crockett Street – Live Oak Street	East	-	-
		Total	**243**	

[1] PM peak = 4:00–5:00 p.m.
[2] Parking capacity is estimated. Occupancies may exceed 100 percent due to motorcycles or other small vehicles consuming less capacity than anticipated.

5 Build and No Build Alternatives

The potential effects described in this section are based on current planning efforts and other available information used to compare the effects of the No Build and Build Alternatives. Potential effects are discussed in terms of general transportation effects, station vicinity land use effects, and consistency with local plans.

5.1 Transit

The analysis for identifying the preferred alternative involved evaluating many service plans that considered different terminal stations and station locations along the corridor. CapMetro has an extensive bus network around the Project that is currently being re-examined to help refine the system and allow it to work better with future transportation projects and the needs of its customers.

5.1.1 No Build Alternative

Under the No Build Alternative, the Project corridor would continue to be served by CapMetro Rapid Route 801 and CapMetro Bus Route 20. The No Build Alternative also includes the proposed CapMetro Rail Green Line and proposed Red Line improvements. It also adds new or expands existing CapMetro Express Bus to and from Downtown Austin and adds eight planned CapMetro Rapid routes.

5.1.2 Build Alternative

This section describes potential effects of the Project on transportation facilities as expected under the Build Alternative. Analysis reflects the preliminary engineering design dated April 19, 2024. The Build Alternative assumes the same guiding principles for service improvement as discussed in the No Build Alternative section, with the inclusion of the Project as part of the Project Connect program. Transit operations would be affected due to the following changes (as shown in **DEIS Appendix C**) to roadways in the Study Area:

- **Guadalupe and Lavaca Streets Bidirectional Flow.** The downtown area would operate with one travel lane (northbound and southbound) on either side of the guideway on Guadalupe Street between MLK Boulevard and 3rd Street. Local traffic would be maintained along Guadalupe Street in this section, including use by buses and emergency vehicles, and for local delivery and garage access. General through-traffic would be relocated to Lavaca Street, which would be converted to bidirectional flow between MLK Boulevard and 2nd Street. The protected bicycle lanes on Guadalupe and Lavaca Streets would be relocated to Nueces Street in coordination with the City. Sidewalks would be included on both sides of Guadalupe and Lavaca Streets. Regarding analysis of the section along Guadalupe Street that would divert vehicular through traffic to alternative north-south arterials and adjacent streets, the 2021 UT Network Options Traffic Analysis memo included the methodology, evaluation and results of potential traffic shifts, and relevant mitigation measures (AECOM 2021). ATP, in coordination with the City's Transportation and Public Works Department, completed the analysis using TransModeler, a traffic simulation model.

- **Guadalupe Street between 29th and 27th Streets.** Guadalupe Street between 29th and 27th Streets would function as a light rail and pedestrian corridor, with vehicular access restricted by signage, traffic control devices, and/or curbs. Emergency access would be accommodated through design.
- **The Drag.** This segment of Guadalupe Street between 27th and 21st Streets would include the light rail guideway, bicycle and pedestrian facilities, and one travel lane in each direction outside the guideway that is intended for bus and bicycle access but would not prevent local access and could be used by emergency vehicles. Buses would operate either in the shared bus/bicycle travel lane on either side of the light rail guideway or in a shared light rail / bus guideway with separated bicycle lanes in the travel lane on either side of the guideway. In both scenarios, pedestrians would use adjacent sidewalks. The current design would accommodate either scenario, and future design phases would analyze the operational effects on transit and active transportation under these scenarios.
- **3rd Street Conversion.** Due to ROW restrictions, ATP would convert 3rd Street between Colorado Street and Congress Avenue to a transit plaza, and vehicular traffic on 3rd Street between Guadalupe Street and Lavaca Street would be eastbound only. Left turns across the tracks, including at signalized intersections, would be prohibited on 3rd Street between Guadalupe and Trinity Streets. ATP would relocate the protected bicycle lanes currently on 3rd Street to 4th Street. ATP would reconstruct 4th Street between Nueces Street and Trinity Street (including the bicycle lanes) before closure of the 3rd Street protected bicycle lanes to mitigate effects on connectivity and safety.
- **Trinity Street.** ATP would provide for continuous bidirectional bicycle lanes on the east side of Trinity Street south of 4th Street. Between the cul-de-sac and Cesar Chavez, Trinity Street would have one vehicular travel lane in each direction separated by the light rail guideway. The cul-de-sac would be signalized and would provide vehicles the ability to turn around. The Cesar Chavez Station would be located on Trinity Street between Cesar Chavez Street and 2nd Street. Due to constrained ROW through the station area, Trinity Street would have one northbound lane north of Cesar Chavez and would have two northbound lanes north of 3rd Street.
- **South 1st Street Bridge Design.** ATP would add a bus-only northbound lane to the South 1st Street bridge to improve bus operations along Guadalupe Street into Downtown Austin. Southbound buses would continue to operate in general purpose traffic lanes; however, one southbound general traffic lane would be removed.
- **East Riverside Drive Bus-Only Lanes.** Due to ROW restrictions, ATP would remove existing bus-only lanes along East Riverside Drive between Summit Street and Grove Boulevard to accommodate the Project in the corridor, and buses would use the general vehicular travel lanes.
- **Bus Stops.** In compliance with the City's Transportation Criteria Manual and CapMetro Service Standards and Guidelines, ATP proposes that bus stops be relocated to signalized crossings, and many stops would have bicycle facilities behind the curb.

5.1.2.1 Transit Facilities

Park-and-rides are parking facilities paired with a transit station to make it more convenient to transfer between single-occupancy vehicles and transit. These locations also facilitate connections between feeder routes, microtransit, biking, and walking, making them key transfer hubs. No existing park-and-rides in the Study Area would be affected by the Project. The Build Alternative includes three proposed park-and-rides, one at each end of the northern, southern, and eastern branches of the Project alignment:

- **38th Street Station Park-and-Ride.** This facility would be located at the northern end-of-line on three adjacent parcels at 3809 Guadalupe Street, 504 West 38th Street, and 558 West 38th Street. This facility is envisioned as a parking structure with capacity for up to 300 parking spaces.
- **Oltorf Station Park-and-Ride.** This facility would be located at the southern end-of-line at 200 Long Bow Lane, east of South Congress Avenue and one block south of Oltorf Street. This facility is envisioned to lease parking spaces from an existing Travis County-owned parking garage, with capacity up to for 100 parking spaces.
- **Yellow Jacket Station Park-and-Ride.** This facility would be located at the eastern end-of-line at 7403 East Riverside Drive, composed of one parcel covering both sides of Coriander Drive on the south side of East Riverside Drive with up to 150 parking spaces.

A new OMF required for light rail operations would be near the US 183/SH 71 interchange at Airport Commerce Drive. This facility would be located on six adjacent parcels at 1500 Airport Commerce Drive, 1400 Airport Commerce Drive, 1340 Airport Commerce Drive, 1336 Airport Commerce Drive, 1340 Airport Commerce Drive, and 1324 Airport Commerce Drive on the west and one parcel at 1501 Airport Commerce Drive on the east. This fully integrated facility would include administration areas, operations areas, light rail vehicle maintenance areas, a light rail vehicle storage yard, maintenance of way areas, and a Light Rail Train Control Center, all supporting the operation and maintenance of the light rail system and light rail vehicle fleet.

5.1.2.2 Ridership

Modeling outputs showing the projected ridership for the Build Alternative were generated using the STOPS model to compare the effects of the Project on transit use to effects under the No Build Alternative. In the Build Alternative and Design Option models, the Project has been added. Ridership forecasts were produced for the Build Alternative based on the current Base Design concept and are subject to refinement as design progresses.

The Project would facilitate multimodal travel, making it easier for people to access transit and improving their experience while using it. **Table 5-1** presents forecasts showing how riders would be expected to access stations on the Project. These forecasts will be updated in the Final Environmental Impact Statement.

Table 5-1: Average Weekday Station Boardings by Mode of Access

Station (Base Design)	Build Alternative 2023					Build Alternative 2045				
	Bike/ Walk	Pas-senger Drop Off	Park-and-Ride	Transfer	Total	Bike/ Walk	Pas-senger Drop Off	Park-and-Ride	Transfer	Total
38th Street	1,329	483	262	255	2,330	1,928	523	309	258	3,017
29th Street	1,215	26	0	41	1,281	1,440	32	0	32	1,504
UT	2,988	13	0	95	3,096	5,230	16	0	132	5,377
15th Street	802	29	0	109	940	1,511	37	0	132	1,679
Congress	914	20	0	226	1,159	2,026	24	0	654	2,705
Cesar Chavez	1,158	24	0	447	1,629	1,629	38	0	3,278	4,945
Waterfront	34	51	0	288	373	146	73	0	293	512
SoCo	201	2	0	1	204	253	2	0	1	255
Oltorf	623	323	58	54	1,058	1,225	435	103	85	1,848
Travis Heights	38	9	0	2	49	51	21	0	10	82
Lakeshore	389	8	0	134	531	955	7	0	104	1,067
Pleasant Valley	1,364	16	0	47	1,427	1,978	54	0	98	2,130
Faro	448	65	0	25	538	1,435	15	0	33	1,484
Montopolis	460	13	0	17	490	1,031	10	0	5	1,046
Yellow Jacket	31	367	185	187	770	129	651	150	387	1,317
Total	**11,994**	**1,449**	**505**	**1,928**	**15,875**	**20,967**	**1,938**	**562**	**5,502**	**28,968**[1]

Source: FTA 2024.
[1] Ridership estimate as of August 2024.

The Build Alternative would benefit the community and broader Austin transit system.

5.1.2.3 Transit Travel Times

Estimated travel times, shown in **Table 5-2**, were calculated for the Build Alternative to allow for comparison between existing service and the Project. These travel times reflect the average weekly travel times by mode for both the 38th Street to Yellow Jacket and the 38th Street to Oltorf alignments.

Table 5-2: Transit Travel Time Estimates, Build Alternative

Direction	Corridor	Intersections	Distance (feet)	Simulation Travel Time (AM) Average (minutes)
Northbound (NB) / Westbound (WB)	NB Guadalupe Street	29th Street Station to 38th Street Station	3,590	2.31
	NB Guadalupe Street	29th Street Station to UT Station	3,168	2.18
	NB Guadalupe Street	15th Street Station to UT Station	3,147	2.18
	NB Guadalupe Street	Congress Station to 15th Street Station	5,592	3.62
	NB Trinity Street	Cesar Chavez Station to Congress Station	1,155	2.37
	NB Trinity Street	Waterfront Station to Cesar Chavez Station	3,391	1.98
	NB Trinity Street	SoCo Station to Waterfront Station	3,421	2.59
	NB South Congress Avenue	Oltorf Station to SoCo Station	4,800	2.86
	WB East Riverside Drive	Travis Heights Station to Waterfront Station	3,191	2.27
	WB East Riverside Drive	Lakeshore Station to Travis Heights Station	3,516	1.81
	WB East Riverside Drive	Pleasant Valley Station to Lakeshore Station	5,358	2.58
	WB East Riverside Drive	Faro Station to Pleasant Valley Station	2,752	1.65
	WB East Riverside Drive	Montopolis Station to Faro Station	3,349	1.68
	WB East Riverside Drive	Yellow Jacket Station to Montopolis Station	3,236	1.49

Direction	Corridor	Intersections	Distance (feet)	Simulation Travel Time (AM) Average (minutes)
Southbound (SB) / Eastbound (EB)	SB Guadalupe Street	38th Street Station to 29th Street Station	3,590	2.31
	SB Guadalupe Street	29th Street Station to UT Station	3,168	2.18
	SB Guadalupe Street	UT Station to 15th Street Station	3,147	2.01
	SB Guadalupe Street	15th Street Station to Congress Station	5,592	3.95
	SB Trinity Street	Congress Station to Cesar Chavez Station	1,155	2.21
	SB Trinity Street	Cesar Chavez Station to Waterfront Station	3,391	1.98
	SB Trinity Street	Waterfront Station to SoCo Station	3,421	2.59
	SB South Congress Avenue	SoCo Station to Oltorf Station	4,800	2.86
	EB East Riverside Drive	Waterfront Station to Travis Heights Station	3,191	2.27
	EB East Riverside Drive	Travis Heights Station to Lakeshore Station	3,516	1.81
	EB East Riverside Drive	Lakeshore Station to Pleasant Valley Station	5,358	2.58
	EB East Riverside Drive	Pleasant Valley Station to Faro Station	2,752	1.65
	EB East Riverside Drive	Faro Station to Montopolis Station	3,349	1.68
	EB East Riverside Drive	Montopolis Station to Yellow Jacket Station	3,236	1.49

Source: FTA 2024.

Estimated end-to-end light rail travel time would be approximately 20 minutes between the 38th Street and Oltorf Stations and 26 minutes between the 38th Street and Yellow Jacket Stations. One of the main intended benefits of light rail would be the increased reliability and efficiency that would result from a dedicated guideway and other transit priority infrastructure. Comparatively, under the No Build Alternative, the estimated end-to-end bus travel time would be approximately 33 minutes between the 38th Street and Oltorf Stations (using CapMetro

Rapid Route 801) and 45 minutes between 38th Street and Yellow Jacket Stations (using local CapMetro Bus Route 20 and transferring to CapMetro Rapid Route 801 at Capitol Station).

The Project would not experience much fluctuation in actual travel time due to its separation from general traffic and the use of maximum transit signal priority at signals. As a result, the Project would positively affect the transit system by increasing efficiency during trips and reducing wait times for passengers who are waiting at stations or making transfers. Quality of service on both weekdays and weekends and at-peak and off-peak hours would also be more consistent. Because time spent in a vehicle is influential on travelers' mode choice, the Project's benefits are expected to contribute to a mode shift away from single-occupancy vehicles, which could help alleviate emissions and traffic congestion.

5.1.2.4 Local Bus Service

The Build Alternative includes designated ROW for bus stop shelters and facilities. These would accommodate the continuation of local bus routes as underlying supplemental service to the Project. These local routes would help connect riders to and from destinations beyond the light rail corridor and would also provide access to and from destinations between light rail stations by stopping approximately every 800 to 1,200 feet.

5.2 Active Transportation

5.2.1 No Build Alternative

Under the No Build Alternative, effects on the Study Area would occur where projects are programed from the CAMPO *2045 Regional Transportation Plan*, the *Austin Strategic Mobility Plan*, and the 2016 Mobility Bond. These improvements to the bicycle and pedestrian networks would occur throughout the Study Area and would improve connectivity, comfort, and safety in the bicycle network and would fill in sidewalk network gaps.

5.2.2 Build Alternative

The Project would provide active transportation benefits along the corridor. **Table 5-3** lists effects on safety for active transportation. Additional location-specific benefits and effects are discussed in the sections below.

Table 5-3: Active Transportation Safety Effects

Positive Effects	Negative Effects
• New signalized crossings would provide additional safe crossings for bicyclists and pedestrians. • New off-street bicycle facilities would provide a safer and more comfortable user experience. • New bikeway improvements would occur along the length of the project (North Lamar Boulevard, Guadalupe Street, Nueces Street, 4th Street, Trinity Street, East Riverside Drive, and South Congress Avenue). • A new bridge crossing at Trinity Street would be available to both bicyclists and pedestrians. • Placement of active transportation facilities behind bus stops would provide benefits by reducing the instances of bike/bus conflicts. • Fewer unsignalized intersections are anticipated with the construction of a light rail system; this would provide more controls at the intersections to regulate traffic flow and discourage undesirable movements that could lead to increased conflicts of vehicles with bicyclists and pedestrians. • The construction of the Project would provide the opportunity to implement other intersection safety improvements that benefit bicyclists and pedestrians.	• The addition of light rail would increase crossing distances for some crosswalks; this risk would be mitigated through traffic signal timing to provide sufficient crossing time. • Bicyclists would need to cross rail tracks, presenting a hazard of a bicycle tire being caught by a flangeway; this risk would be mitigated by configuring crossings as close to 90-degree angles as possible. • The addition of light rail would increase the potential for interaction of bicyclists and pedestrians with the light rail, potentially leading to conflicts involving the light rail. • Retention of the large number of driveways along the corridor would continue to present conflicts between active transportation users and automobiles. • Changes to the 1st Street bridge would convert the existing bike lane to general purpose lane and would reroute the bike lane to the pedestrian bridge.

5.2.2.1 38th Street Station

Potential Benefits

The Project would benefit people biking and walking in the station area by installing additional signals for crossing the corridor. It is also important to note that crossings for major east-west bicycle corridors at North Loop and 38th Street would be preserved.

5.2.2.2 29th Street and UT Stations

Potential Benefits

The 29th Street and UT Stations would be near UT's campus. As one of the largest universities in the country, UT is a major hub for students, faculty, and staff biking and walking in the surrounding area. As such, the provision of safe infrastructure is crucial. This segment of the corridor also poses engineering and property effect challenges with the existing curvature of Guadalupe Street as it crosses West 29th Street. The Build Alternative would include a less

angular path for the Project and reconstruction of Guadalupe Street from West 29th Street to Fruth Street. Reconstructing the adjusted Guadalupe Street would provide active transportation benefits. New bicycle and pedestrian facilities would be compliant with the Americans with Disabilities Act and likely wider than what currently exists. This section of Guadalupe Street has on-street painted bicycle lanes with frequent conflicts between buses and cyclists when buses pull into the bicycle lane to serve frequent, high-ridership stops (with the exception of the Southbound stretch with a cycle track).

This section also has high pedestrian traffic due to its proximity to UT but relatively infrequent signalized crossing locations. Under the Build Alternative, bicycle facilities between Fruth Street and 29th Street would be removed. Hemphill Park between 29th and 27th Streets would be restriped with curb adjustments to provide a raised bicycle lane. Also, Nueces Street from 27th to 29th Streets would be restriped with curb adjustments to provide a protected bicycle lane. Additionally, the east side of West 30th Street would be shifted north. This shift would improve crossing at this location because traffic, including active transportation users, would be able to travel directly across Guadalupe Street rather than turning onto Guadalupe Street to turn again onto West 30th Street.

Another benefit of the Project would be the restriction of automobile traffic on Guadalupe Street from West 29th Street to West 21st Street, which would provide space for bicycle and pedestrian facilities without requiring substantial ROW increases. Likewise, closing the intersection of Guadalupe Street and West 25th Street to vehicular traffic would provide safety benefits for people biking and walking along the corridor.

Potential Effects and Mitigation

Different operational scenarios will be investigated in future design phases. One potential operational scenario includes shared lanes among bicycles, micromobility devices, and buses for the segment between 27th and 21st Streets, which could present potential hazards for people biking or using micromobility devices along this segment. Ensuring these lanes follow best practices in shared bus/bicycle lane design, including low bus speeds (20 miles per hour or less), low bus volumes (15 buses per hour or less), and physical separation at bus stops would help mitigate these potential effects.

5.2.2.3 15th Street Station

Potential Benefits

The removal of the existing channelized right-turn lane on Guadalupe Street at West MLK Boulevard, traveling southbound, would provide benefits for people biking and walking through this intersection. Extending curbs to narrow intersections at several locations, including West 18th Street and West 17th Street at Guadalupe Street, would provide benefits for people biking and walking along the corridor at these locations by shortening the crossing distances.

Potential Effects and Mitigation

The siting of bus stop platforms in the middle of the pedestrian walkway along Guadalupe Street south of West 9th Street could create potential conflicts between riders waiting or queuing for

the bus and pedestrians traveling north-south along Guadalupe Street. This could also create potential conflicts resulting from bus stop amenities such as shelters and seating.

As part of this Project, bicycle facilities are currently not planned for this segment of the corridor on Guadalupe and Lavaca Streets. Colorado Street (east of Lavaca Street) and Nueces Street (west of Guadalupe Street) currently have shared lane markings (sharrows). Protected bicycle facilities would be provided from MLK Boulevard to Cesar Chavez Street along Nueces Street for people biking north-south along the corridor.

Additionally, between 9th Street and 7th Street, the light rail would be located in a trench structure. This structure would include a retaining wall on either side of the guideway. Bicyclists and pedestrians would not be able to travel east-west on 8th Street across Guadalupe Street. The current design of the trench structure includes a safety fence on top of the retaining wall to prevent pedestrians from crossing the guideway at this location.

5.2.2.4 Congress and Cesar Chavez Stations

Potential Benefits

The corridor intersects the Ann and Roy Butler Hike and Bike Trail south of Cesar Chavez Street. This trail facility is a major east-west corridor for bicyclists and pedestrians in Austin. Bidirectional facilities are planned for bicyclists traveling along Trinity Street between 4th Street and the Ann and Roy Butler Hike and Bike Trail. The Project would provide a substantial benefit by connecting to this trail.

Potential Effects and Mitigation

The Project would remove the protected bicycle infrastructure along 3rd Street. Protected bicycle facilities would be moved one block north to 4th Street between Nueces Street and Trinity Street. Reconstructed facilities would then connect to the Lance Armstrong Bikeway at Trinity Street. This alignment would require full reconstruction of the street and would be completed prior to construction on 3rd Street to prevent effects on the Lance Armstrong Bikeway.

Currently, no connection or protected intersection for cyclists to connect to the Ann and Roy Butler Hike and Bike Trail from Cesar Chavez Street and Nueces Street has been identified. This connection will be studied in future design phases.

5.2.2.5 Waterfront Station

Potential Benefits

The bridge across Lady Bird Lake would include bicycle and pedestrian facilities, which would add a river crossing for people biking and walking and an alternative to the on-street facilities on Congress Avenue. This river crossing would provide a public benefit because separated facilities offer a safer and more comfortable experience for active transportation users.

The Lady Bird Lake Bridge Extension Design Option would likely have limited effects on street-level active transportation conditions in the station area. A combined multiuse path connecting

the station to the street would be planned for this Design Option. The design is representational only and will be refined in future phases of design.

Potential Effects and Mitigation

The Build Alternative would include hinged pedestrian gates where the light rail would cross the bicycle and pedestrian track on the east side of South Congress Avenue. This crossing could present potential hazards for people biking and walking along South Congress Avenue. Additionally, potential conflicts between northbound and southbound bicyclists and pedestrians could occur at this location. Westbound bicycle and pedestrian traffic must cross over bidirectional bicycle and pedestrian traffic traveling north-south. Without a signal, roundabout, or clear signage indicating which direction should yield, conflicts between bicyclists and traffic, as well as bicyclists and pedestrians could occur.

5.2.2.6 SoCo Station

Potential Benefits

South Congress Avenue currently has many angled parking spaces along both sides of the ROW. Additionally, on-street bicycle lanes run between the angled parking and through the vehicular travel lanes. Under the Build Alternative, the parking would be reconfigured such that angled parking would be removed and replaced by a “flex zone” where parallel parking spaces, delivery zones, autonomous vehicle drop-off points, or trees could be accommodated. Off-street bicycle facilities would be added behind the “flex zone” curb, which would reduce conflicts between bicycles and automobiles, providing a substantial Project benefit.

Pedestrians in the station area would also benefit from improvements at Annie Street. The Project would construct new behind-curb bicycle facilities on the south side of West Annie Street where there are currently no facilities. These new behind-curb bicycle facilities would create safety benefits for people traveling along South Congress Avenue and Annie Street.

An additional potential benefit can be found at the intersection of South Congress Avenue and Gibson Street. Gibson Street does not have sidewalks on both sides of the approach to South Congress Avenue. Rebuilding the sidewalk at this intersection would provide benefits for pedestrians crossing at this location.

5.2.2.7 Oltorf Station

Potential Benefits

The Project would provide potential benefits in this station area. Along South Congress Avenue in this segment, on-street bicycle lanes run between the curb and adjacent through lanes. Under the Build Alternative, the bicycle lanes would be moved behind the curb. These bicycle facilities would provide substantial safety and comfort benefits for people biking in the corridor.

Current design also proposes a closure of Bartlett Street at South Congress Avenue, with a curb along Lindell Avenue and South Congress Avenue to enclose this portion of Bartlett Street. This new enclosure would provide additional space for off-street active transportation facilities and would reduce the number of potential conflicts between active transportation users and automobiles.

5.2.2.8 Travis Heights and Lakeshore Stations

Potential Benefits

The Project would provide substantial active transportation benefits in the Travis Heights Station area. Existing conditions in the station area do not include bicycle facilities along East Riverside Drive. The Project would provide benefits to people biking in the corridor area by providing a shared use path near the Travis Heights and Lakeshore Stations.

A new signalized crossing at Newning Avenue would provide better access for people biking and walking in the station area. A shared use path connects East Riverside Drive to the Ann and Roy Butler Hike and Bike Trail at this location, a major east-west facility for active transportation. Currently, the closest crossings are East Riverside Drive to the west or Alameda Drive to the east (approximately 1,500 feet). Under the Build Alternative, the existing crossing at Alameda Drive would be removed and replaced by a new crossing west of Academy Drive. The intersection of East Riverside Drive and Summit Street would also gain a new signal, providing a benefit in the Lakeshore Station area.

Planned potential driveway closures between Summit Street and Tinnin Ford Drive would also provide safety benefits for people biking and walking along the corridor by reducing the number of conflict points with automobiles. Planned bicycle facilities in the area, such as the on-street bike lanes on Town Creek Drive, would benefit from the east-west connection along East Riverside Drive.

Potential Effects and Mitigation

To avoid effects on the Riverwalk condominiums, a shared use path would not be provided on the north side of East Riverside Drive (at the front of the complex). Bicyclists traveling westbound along this segment could detour to the Boardwalk section of the Ann and Roy Butler Hike and Bike Trail.

5.2.2.9 Pleasant Valley Station

Potential Benefits

Bicycle facilities and sidewalks are planned along East Riverside Drive in both directions in the Pleasant Valley Station area. These bicycle facilities and sidewalks would provide a substantial benefit for active transportation users because the existing conditions along East Riverside Drive do not include bicycle facilities and existing sidewalk facilities are narrow.

As in other station locations, pedestrian transportation facilities are planned to continue behind planned bus stops at Willow Creek Drive and Pleasant Valley Road. Pleasant Valley Road is a crucial north-south connection for both active transportation and transit. This transfer point would result in many people biking and walking in the station area. Placement of bus stops between active transportation facilities and the curb would provide benefits by reducing potential conflicts between people traveling along East Riverside Drive and people accessing the bus stop.

The Project would also benefit people biking and walking in the station area at Pleasant Valley Road. In proposed conditions, motorists traveling along East Riverside Drive would use

signalized intersections to change their direction of travel rather than using existing protected U-turn facilities. Shifting motorized traffic to the signalized intersection would improve safety for active transportation users in the station area. New curb lines would slow turning traffic and create shorter crossing distances across East Riverside for people accessing the Pleasant Valley platform on the nearside.

5.2.2.10 Faro, Montopolis, and Yellow Jacket Stations

Potential Benefits

As stated, East Riverside Drive does not currently have bicycle facilities. The Project would provide benefits over existing conditions to people biking in the corridor area by providing a dedicated east-west bicycling path. The Project would also provide connections to existing trails in the area, such as the Country Club Creek Trail. The connection is not yet finalized, and the connection design is yet to be determined. Active transportation users in these station areas would also benefit from planned CapMetro Bikeshare bicycle rental stations.

The Project would also connect to planned bicycle facilities on Crossing Place and Faro Drive. The City has identified a need for these facilities to serve the nearby elementary school. Protected bicycle lanes along Montopolis from US 183 to Grove Boulevard are also planned for this segment. New facilities along East Riverside Drive would expand mobility and access provided by these planned facilities. Beyond these facilities identified, there would be few bicycling facilities in this segment.

The Project would also provide benefits by installing additional signals at intersections along this segment. Signals are planned for the intersections of East Riverside Drive and Penick Drive and East Riverside Drive and Anise Drive. Potential proposed driveway closures in this segment would also provide active transportation benefits by reducing the number of potential conflict points between active transportation users and automobiles. The placement of bus stops between bicycle facilities and the curb would also reduce potential conflicts between users traveling east-west and passengers waiting, arriving, or disembarking at bus stops.

Finally, the proposed amenity space at Yellow Jacket Station would provide benefits to people biking and walking in the corridor. The amenity space has yet to be determined and designs have not been finalized, but a public plaza space would offer additional amenities for active transportation users in the station area.

5.2.2.11 Operations and Maintenance Facility

Potential Benefits

The Project would provide potential benefits surrounding the OMF through the installation of additional signals at nearby intersections. New intersections include East Riverside Drive at Airport Commerce Drive and Airport Commerce Drive near John Glenn Way. The Project would also provide safety benefits through proposed shared use paths along East Riverside Drive.

Protected bicycle facilities are identified in the *Austin Strategic Mobility Plan* along Airport Commerce Drive between East Riverside Drive and US 183 to be built in coordination with the

Central Texas Regional Mobility Authority. However, these facilities would not be built with the Project.

5.3 Traffic

5.3.1 No Build Alternative

A traffic analysis was performed to determine the level of service (LOS) for the No Build Alternative within the Study Area. Traffic volumes along the corridor were projected using the growth rates found in Section 3.4.2. Overall, traffic flow along the corridor is experiencing typical peak flows based on the existing regional commute patterns. AM peak period traffic flow continues to be most prominent toward downtown, with PM peak period traffic flowing away from the downtown area. With the growth of the regional population, heavy pedestrian flows would continue to add to the vehicular congestion along corridors.

5.3.2 Build Alternative

The level of service describes operational conditions in six levels based on speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. These six levels are given the letters "A" through "F" and have different descriptions and defining criteria depending on the type of intersection analyzed. Level of service criteria for traffic signals are based on the average control delay per vehicle, LOS A representing the best operational conditions and LOS F representing an over-capacity condition with a high degree of congestion. Control delay, including deceleration and acceleration delay, queue move-up times, and stopped delay, is established in the *Highway Capacity Manual* 6th edition. These criteria are shown in **Table 5-4**.

Table 5-4: Intersection Delay and Corresponding Levels of Service

LOS	Signalized Intersection Delay (seconds/vehicle)	Unsignalized Intersection Delay (seconds/vehicle)
A	< 10	< 10
B	10–20	10–15
C	20–35	15–25
D	35–55	25–35
E	55–80	35–50
F	> 80	> 50

Source: Transportation Research Board 2016.

Intersection delay was evaluated using the same LOS methods identified above. Delay is a measure of additional travel time experienced by travelers at speeds less than the free-flow speed (expressed in seconds).

Table 5-5 provides a comparison of the changes in LOS from the No Build Alternative to the Build Alternative. For this traffic analysis, LOS D is considered the minimum acceptable standard. Intersection grades in bold type fall below this standard.

Table 5-5: Summary of 2045 No Build Alternative and Build Alternative Peak Hour Level of Service

Model Segment	Intersection	AM Peak LOS		PM Peak LOS	
		No Build	Build	No Build	Build
North Segment A	Trinity St / E Riverside Dr	F	F	E	F
North Segment A	Trinity St / E Cesar Chavez St	D	F	C	F
North Segment A	Trinity St / W 3rd St	C	D	A	E
North Segment A	San Jacinto Blvd / W 3rd St	B	E	C	D
North Segment A	Congress Ave / W 3rd St	E	E	B	F
North Segment A	Colorado St / W 3rd St	D	C	D	C
North Segment A	San Antonio St / W 3rd St	A	B	F	D
North Segment B	Guadalupe St / 38th St	F	F	F	F
North Segment B	Guadalupe St / 34th St	D	D	F	F
North Segment B	Guadalupe St / 30th St	D	D	F	F
North Segment B	Guadalupe St / 29th St	E	C	F	F
North Segment B	Guadalupe St / 22nd St	E	A	E	B
North Segment B	Guadalupe St / 21st St	D	C	F	D
North Segment B	Guadalupe St / W MLK Blvd	F	F	C	F
North Segment B	Lavaca St / W MLK Blvd	B	F	E	F
North Segment B	Guadalupe St / W 18th St	A	D	C	C
North Segment B	Lavaca St / W 18th St	B	A	F	B
North Segment B	Guadalupe St / W 17th St	C	F	F	D
North Segment B	Lavaca St / W 17th St	B	C	F	C
North Segment B	Guadalupe St / W 16th St	A	C	C	D
North Segment B	Lavaca St / W 16th St	A	A	F	B
North Segment B	Guadalupe St / W 15th St	B	C	D	C
North Segment B	Lavaca St / W 15th St	B	E	F	D
North Segment B	Guadalupe St / W 14th St	A	C	F	B

Model Segment	Intersection	AM Peak LOS		PM Peak LOS	
		No Build	Build	No Build	Build
North Segment B	Lavaca St / W 14th St	A	E	F	E
North Segment B	Guadalupe St / W 13th St	C	B	F	B
North Segment B	Lavaca St / W 13th St	A	E	F	F
North Segment B	Guadalupe St / W 12th St	C	C	E	F
North Segment B	Lavaca St / W 12th St	B	F	F	F
North Segment B	Guadalupe St / W 11th St	B	F	F	C
North Segment B	Lavaca St / W 11th St	C	F	F	F
North Segment B	Guadalupe St / W 10th St	B	C	F	B
North Segment B	Lavaca St / W 10th St	A	F	F	F
North Segment B	Guadalupe St / W 9th St	A	B	F	F
North Segment B	Lavaca St / W 9th St	B	C	F	F
North Segment B	Lavaca St / W 8th St	B	C	F	F
North Segment B	Guadalupe St / W 7th St	A	C	F	F
North Segment B	Lavaca St / W 7th St	B	C	F	F
North Segment B	Guadalupe St / W 6th St	B	C	F	C
North Segment B	Lavaca St / W 6th St	D	F	F	F
North Segment B	Guadalupe St / W 5th St	C	F	F	F
North Segment B	Lavaca St / W 5th St	B	D	F	F
North Segment B	Guadalupe St / W 4th St	B	D	F	F
North Segment B	Lavaca St / W 4th St	B	D	F	F
North Segment B	Guadalupe St / W 3rd St	A	D	F	F
North Segment B	Lavaca St / W 3rd St	B	D	F	F
North Segment B	Guadalupe St / W 2nd St	B	B	F	E
North Segment B	Lavaca St / W 2nd St	C	E	F	F
North Segment B	Guadalupe St / W Cesar Chavez St	C	F	E	E
North Segment B	Lavaca St / W Cesar Chavez St	D	F	F	F
North Segment B	S 1st St / W Riverside Dr	F	F	F	F
South Segment	S Congress Ave / Nellie St/Academy Dr	D	B	D	C

Model Segment	Intersection	AM Peak LOS		PM Peak LOS	
		No Build	Build	No Build	Build
South Segment	S Congress Ave / W James St/The Circle	E	A	A	A
South Segment	S Congress Ave / Gibson St	D	A	D	B
South Segment	S Congress Ave / Elizabeth St	D	A	E	C
South Segment	S Congress Ave / Monroe St	D	A	E	B
South Segment	S Congress Ave / Milton St	D	B	D	B
South Segment	S Congress Ave / Annie St	E	C	D	C
South Segment	S Congress Ave / Mary St	F	D	D	C
South Segment	S Congress Ave / Leland St	F	B	D	C
South Segment	S Congress Ave / Live Oak St	F	C	B	C
South Segment	S Congress Ave / Oltorf St	F	F	F	F
East Segment	E Riverside Dr / SH 71 WB	F	F	F	F
East Segment	E Riverside Dr / Airport Commerce[1]	C	F	F	B
East Segment	E Riverside Dr / Coriander Dr	F	D	F	E
East Segment	E Riverside Dr / Montague St / Anise Dr	F	F	F	C
East Segment	E Riverside Dr / Maxwell Ln / Frontier Valley Dr	F	F	F	E
East Segment	E Riverside Dr / Vargas Rd	F	F	F	D
East Segment	E Riverside Dr / Montopolis Dr	F	F	F	F
East Segment	E Riverside Dr / Grove Blvd	D	F	F	F
East Segment	E Riverside Dr / Faro Dr	F	F	F	F
East Segment	E Riverside Dr / Crossing Pl	F	F	F	F
East Segment	E Riverside Dr / Wickersham Ln	E	F	F	F
East Segment	E Riverside Dr / S Pleasant Valley Rd	F	F	F	F
East Segment	E Riverside Dr / Willow Creek Dr	C	F	F	F
East Segment	E Riverside Dr / Burton Dr / Tinnin Ford Rd	D	D	F	F
East Segment	E Riverside Dr / Royal Crest Dr	C	C	F	E

Model Segment	Intersection	AM Peak LOS		PM Peak LOS	
		No Build	Build	No Build	Build
East Segment	E Riverside Dr / Parker Ln/Shore District Dr	C	C	F	F
East Segment	E Riverside Dr / Lakeshore Blvd	C	C	F	F
East Segment	E Riverside Dr / Summit St NB movements	F	A	F	C
East Segment	E Riverside Dr / Summit St SB movements (SWBR/SWBL)	F	C	F	F
East Segment	E Riverside Dr / I-35	F	F	F	F
East Segment	E Riverside Dr / Travis Heights Blvd/Park Pl	B	D	F	F

[1] Intersection is unsignalized under the No Build Alternative.

Intersections and segments were analyzed to create optimized multimodal throughput. While some intersection levels of service remained unchanged, others slightly degraded or slightly improved. **Table 5-6** shows how the intersection level of service for the Build Alternative would change when compared to the No Build Alternative, identifying the number of intersections that would improve, stay the same, and worsen during the AM and PM peak hours. **Table 5-7** shows the number of intersections with acceptable and reduced levels of service under both the No Build and Build Alternatives during the AM and PM peak hours.

Table 5-6: LOS Comparison Between 2045 No Build Alternative and Build Alternative Peak Hour

Model Segment	AM Peak LOS			PM Peak LOS		
	Improved	Stayed Same	Worsened	Improved	Stayed Same	Worsened
North Segment A	1	2	4	2	0	5
North Segment B	5	8	31	15	25	4
South Segment	10	1	0	8	2	1
East Segment	3	13	5	7	14	0
Total	**19**	**24**	**40**	**32**	**41**	**10**

Table 5-7: Number of Intersections with Acceptable and Reduced LOS for the 2045 No Build Alternative and Build Alternative Peak Hour

Model Segment			North Segment A	North Segment B	South Segment	East Segment	Total
AM Peak LOS	No Build	Acceptable LOS	5	39	5	8	57
		Reduced LOS	2	5	6	13	26
	Build	Acceptable LOS	3	27	10	8	48
		Reduced LOS	4	17	1	13	35
PM Peak LOS	No Build	Acceptable LOS	5	4	8	0	17
		Reduced LOS	2	40	3	21	66
	Build	Acceptable LOS	3	15	10	4	32
		Reduced LOS	4	29	1	17	51

All cost-effective improvements (e.g., signal retiming, restriping) were considered and applied to each intersection to optimize level of service improvements to serve the growing demand in the future under the Build Alternative.

Under the Build Alternative, 35 intersections would operate at a reduced level of service (LOS E or LOS F) during the AM peak period and 51 intersections would operate at a reduced level of service during the PM peak period (see **Table 5-7** above). Compared to the No Build Alternative, 19 intersections during the AM peak period and 32 intersections during the PM peak period showed improved level of service with the addition of light rail (see **Table 5-6** above). The level of service at other intersections either remained the same or worsened under Build Alternative because of delays associated with light rail. The crossing roadways may experience increased delay with signal priority given to the light rail traveling direction, and passing light rail vehicles may briefly interrupt the flow of the traffic. Traffic flow is also expected to retain similar patterns to the existing and No Build Alternatives. The AM peak period would have prominent flow toward downtown, while the PM peak period would have traffic flow away from the downtown area.

Additionally, the inclusion of light rail would generally increase the person capacity of the corridor because high-capacity transit vehicles can transport a higher number of passengers than personal vehicles without the need for greater space. Additionally, improvements to active transportation infrastructure from the Project are expected to increase the attractiveness of these alternate modes and further decrease the demand for personal vehicles.

These findings were prepared with preliminary modeling results. The modeling results were used as part of the iterative development of the April 19, 2024, base design plans. Modifications were made to the design to achieve level of service outcomes that are at, or better than, those associated with the No Build Alternative during the AM and PM peak periods where feasible. In some locations, reaching the objective level of service is not possible due to ROW or geometric

constraints. During final design, the Project would be further modified to achieve desirable level of service outcomes (that are at, or better than, those associated with the No Build Alternative during the AM and PM peak periods) where feasible. The following general design refinement was considered for the engineering design plans:

- Light rail and vehicle travel efficiency were analyzed through intersection redesign where warranted and through light rail / traffic signal preemption and optimized traffic signal timing. Preemption of traffic signals and other measures should help ensure that queued vehicles are cleared at light rail / roadway crossings. Design features addressed updated travel modeling results. Signalized intersections that are expected to perform with a reduced level of service (less than LOS D and worse than the level of service under the No Build Alternative) after final design may warrant other specialized improvements at specific intersections.
- Three intersection clusters were observed to contribute to corridor congestion due to equally high east-west traffic demand:
    - Guadalupe Street / 15th Street and Lavaca Street / 15th Street;
    - Guadalupe Street / 5th Street, Guadalupe Street / 6th Street, Lavaca Street / 5th Street, and Lavaca Street / 6th Street;
    - Guadalupe Street / Cesar Chavez Street and Lavaca Street / Cesar Chavez Street.
- At the intersection of Lavaca Street and 3rd Street, the light rail track-crossing creates a delay for north-south traffic.

Within the Downtown Segment, existing infrastructure limitations at intersections preclude substantial improvement in traffic flow, regardless of Project implementation. Traffic patterns in this area are expected to remain largely unchanged from the current baseline, with a dominant flow observed toward the downtown core during the morning peak period and outward during the evening commute.

Traffic performance at intersections generally improves in the South Segment with the implementation of light rail. While transit signal priority along South Congress Avenue may reduce delay along the roadway itself (and at intersections as a whole), minor movements (major street left turns and cross street left turns and throughs) may experience longer delay at signals. The intersections of South Congress Avenue and Oltorf Street and South Congress Avenue and Riverside Drive remain congestion points, experiencing LOS F during both the AM and PM peak periods under both the No Build and Build Alternatives.

In the East Segment, some intersections experience increased delays with the light rail implementation while others show improvement. Level of service during the PM peak period appears to benefit from the Project. Roadway redesign on East Riverside Drive with reduced travel lanes encourages cross-street to cross-street movements to allow users to choose alternative routes and enable longer westbound-eastbound movements to allow users to choose their route through East Riverside Drive. This travel pattern shift, along with modal shift and lane drop elimination at Summit Street, factors toward the favorable level of service under the Build Alternatives and Design Options.

Despite operational benefits at many intersections, bottlenecks identified under the No Build Alternative at I-35, South Pleasant Valley Road, and SH 71 are still present. As a result of high traffic volumes at intersection approaches, South Pleasant Valley Road is one of the bottlenecks experienced along the East Riverside Drive corridor, with queues extending to SH 71 during the AM peak period. During the PM peak period, queues from South Pleasant Valley Road extend to approximately I-35.

The traffic operations outputs from this analysis can be improved in future iterations of the Project design. Potential measures could include restriping, implementing additional signal coordination measures, and/or using unique traffic signal phasing schemes at various locations along the corridor.

Table 5-8: Build Alternative Traffic Model Assumptions

Model Segment	Intersection	Mitigation
All Segments	All intersections	Signal timing optimization (to be refined during final design)
All Segments	Various intersections	Located left-turn lanes based on preliminary traffic analysis and feasibility of design
All Segments	Various intersections	Optimized queue storage length to reflect the left-turn queue needs where feasible
East Segment	Various intersections along E Riverside Dr	Separated pedestrian phase into two phases when crossing E Riverside Dr to improve traffic operations
All Segments	Various intersections	Implemented high transit signal priority for the light rail
North Segment B	Lavaca St intersections from W 2nd St to W MLK Blvd	Converted Lavaca St from one-way northbound to two-way traffic with strategically located left-turn lanes and restrictions on left turns at alleys and garage entrance to optimize traffic operations
North Segment B	Guadalupe St / W 15th St	Removed westbound left-turn movement to provide increased queue storage length for eastbound left turn at Lavaca St / W 15th St intersection
North Segment B	W 2nd St from Guadalupe St to Lavaca St	Converted W 2nd St from two-way traffic to one-way westbound in the block between Guadalupe St and Lavaca St to increase capacity for traffic movement from southbound Lavaca St to shift to southbound Guadalupe St for access to the S 1st St bridge (Drake Bridge) over Lady Bird Lake

Model Segment	Intersection	Mitigation
North Segment B	S 1st St from W Riverside Dr to W Cesar Chavez St	Shifted bicycle traffic to existing side paths to provide space for a northbound bus-only left-turn lane for buses to access northbound Guadalupe St at the Guadalupe St / W Cesar Chavez St intersection
North Segment B	Guadalupe St from W 3rd St to W MLK Blvd	Prohibited left turns for traffic along Guadalupe St to optimize traffic operations
North Segment B	Nueces St from Cesar Chavez St to W MLK Blvd	Added continuous bike lanes along Nueces St to mitigate the removal of striped on-street bike lanes along Guadalupe St and Lavaca St
North Segment A	3rd St from Guadalupe St to Trinity St	Prohibited left turns for traffic along 3rd St to optimize traffic operations
North Segment A	4th St from Nueces St to Trinity St	Added protected bike lanes along 4th St to mitigate the removal of protected bike lanes along 3rd St

5.4 Park-and-Rides

Forecasted traffic volumes were adjusted to reflect anticipated traffic generated by park-and-rides within the Study Area at 38th Street and Guadalupe Street, South Congress Avenue and Oltorf Street, and Riverside Drive and Yellow Jacket Lane. Traffic volumes were adjusted to include an increase in entering and exiting traffic based on the proposed vehicle spaces at each park-and-ride. **Table 5-9** shows the number of trips generated based on the proposed vehicle spaces at each park-and-ride.

Table 5-9: Trips Generation at Park-and-Ride Locations

Park-and-Ride Location	Parking Spaces	AM Volumes		PM Volumes	
		Enter	Exit	Enter	Exit
38th Street	300	137	39	43	122
Oltorf Street	100	117	33	38	107
Yellow Jacket Lane	150	117	33	38	107

Source: AECOM 2024.

Synchro 11 analysis was conducted to determine the traffic effects related to the forecasted base traffic volumes and the revised traffic volumes at the three intersections at the park-and-ride locations. At all three park-and-ride locations, the additional volumes do not result in substantial effect on the adjacent intersection's overall operation for both AM and PM peak hours.

The level of service for the Design Options within the Study Area have also been analyzed. The comparison between the No Build, Build Alternative, and Design Options are presented in

Section 6. The traffic operations outputs that result from this analysis for both the Build Alternative and Design Options can be improved in future iterations of the Project design. Longer turn lanes, additional signal coordination measures, additional turn lanes, bus pullouts, and/or unique traffic signal phasing schemes are all methods that could be implemented at various locations to help improve traffic operations along the corridor.

5.5 Traffic Safety

Traffic safety effects of the Build Alternative are discussed in this section. General positive and negative effects are provided in **Table 5-10** for implementation of the Project.

Table 5-10: Traffic Safety Effects

Positive Effects	Negative Effects
• The Project would add new signals to existing unsignalized intersections, allowing for greater regulation of traffic flow and discouragement of undesirable movements that could lead to increased conflicts. • With the increase in signalized intersections, bicycle and pedestrian crossings would be limited to signalized intersections. The intersections provide safe refuge and wayfinding locations for bicyclists and pedestrians. • The construction of the Project would provide the opportunity to implement other intersection improvements to crossing roadways. • Ridership would increase on the light rail service. An increase in ridership would potentially reduce personal vehicle trips, resulting in a decrease in overall average daily traffic and anticipated vehicle conflicts along the corridor.	• The addition of light rail would increase the potential for conflicts between vehicles, bicyclists, and pedestrians and the light rail vehicles.

As the Project progresses through its design phases, ATP would continue to coordinate with the Austin Fire Department and Austin-Travis County Emergency Medical Services to develop plans for emergency or disaster management.

5.6 Parking

5.6.1 No Build Alternative

Under the No Build Alternative, no parking would be affected by the Project. Parking availability could still be affected where property redevelopment is planned by private developers or by other projects under Project Connect and other regional transportation plans. In March 2023,

the Austin City Council created a Parking and Transportation Management District around South Congress Avenue that led to the implementation of paid parking along South Congress Avenue. A Parking and Transportation Management District is a defined geographic area that may include a mix of retail, entertainment, commercial, medical, educational, civic, and residential uses in which the Austin City Council finds that traffic flow on public streets requires a higher level of management than commonly provided and determines that parking meters will facilitate traffic flow objectives. In November 2023, the City passed an ordinance that removes any minimum parking requirements on any new development.

5.6.2 Build Alternative

5.6.2.1 Parking Effects

Table 5-11 summarizes Project's effect on parking in the Study Area by location.

Table 5-11: Potential Effects on Parking

Study Segment	Existing/No Build Alternative	Estimated Number of Spaces to Be Eliminated
Guadalupe Street from 38th Street to 15th Street	Parking is primarily composed of off-street surface lots for private businesses and on-street parking. On-street parking is located on the west side of Guadalupe Street between Dean Keeton Street and MLK Boulevard. There is also some on-street parking on streets perpendicular to the Project corridor.	86
Central Business District 15th Street to Riverside Drive	This segment includes Downtown Austin. On-street parking spaces are found on this segment on the Project corridor and perpendicular streets.	163
South Congress Riverside Drive to Oltorf Street	This segment includes the South Congress commercial district, which provides back-in angle on-street parking on both sides of the roadway.	358

5.6.2.2 Loss of On-Street Parking

The Project would result in an estimated loss of 607 on-street parking spaces in the Study Area, which comprise approximately 77 percent of the on-street parking spaces in the Study Area. There are no on-street parking spaces on East Riverside Drive. While the Project would reduce the supply of parking, it would also reduce the demand for parking because the light rail would serve nearly 29,000 trips each day, with the majority of trips to the station made by biking or walking.

6 Design Options Impact Assessment

This impact assessment provides an overview of the effects on transit, active transportation, and traffic relative to each Design Option.

6.1 Wooldridge Square Station Design Option

ATP is evaluating the addition of a station near Wooldridge Square in response to public support for improved access to light rail in Downtown Austin. The potential effects of this Design Option are discussed below.

6.1.1 Transit

Republic Square is a public park located in Downtown Austin. It serves as a major transit hub for CapMetro service with southbound bus stops at 4th Street/Guadalupe Street and northbound stops at 4th Street/Lavaca Street. It is characterized as a hub with high transfer activity and is served by both CapMetro Rapid Routes 801 and 803. Republic Square also provides transit travelers the option to transfer to several CapMetro Bus local routes, including routes 2, 4, 7, 10, and 20.

The Wooldridge Square Station Design Option introduces a new transit hub on Guadalupe Street between 11th and 9th Streets, which would serve as a potential transit hub replacement for Republic Square. Potential effects of this change include reduced access, connectivity, and transfer opportunity to bus service for lower downtown. Other potential effects include the increase of transfers at stops located on streets adjacent to Republic Square and development of new locations for vehicle layover and special event service management.

6.1.2 Active Transportation

Potential Benefits

The Wooldridge Square Station Design Option would provide many of the same benefits described for the 15th Street Station in Section 5.2.2.3. This option begins at West 11th Street and ends at West 7th Street. New sidewalk facilities would provide benefits to pedestrians in the station area.

Potential Effects and Hazards

As is the case under the Build Alternative, bicycle facilities are currently not planned for this segment of the corridor on Guadalupe Street or parallel Lavaca Street. Colorado Street (east of Lavaca Street) and Nueces Street (west of Guadalupe Street) currently have shared lane markings (sharrows). Protected bicycle facilities would be provided from MLK Boulevard to Cesar Chavez Street along Nueces Street for people biking north-south through the corridor.

Also consistent with the Build Alternative is the trench structure between 9th Street and 7th Street. This structure would include a retaining wall on either side of the guideway. Bicyclists and pedestrians would not be able to travel east-west on 8th Street across Guadalupe Street. The current design of the trench structure includes a safety fence on top of the retaining wall to prevent pedestrians from crossing the guideway at this location.

The Wooldridge Square Station Design Option is located at the intersection of Guadalupe Street and 10th Street and would restrict westbound through traffic and left turns as well as eastbound left turns, forcing some vehicles to use other cross streets. However, this Design Option would convert 10th Street between Guadalupe Street and Lavaca Street into a two-way street, allowing for eastbound left and right turns at the intersection of Lavaca Street and 10th Street and northbound right turns at the intersection of Guadalupe Street and 10th Street.

6.1.3 Traffic

Due to the proposed roadway reconfiguration, the Wooldridge Square Station Design Option would remove conflicting vehicular turning movements with the light rail, thereby eliminating the need for a signalized intersection at Guadalupe Street and 10th Street. Under this Design Option, the levels of service at the Guadalupe Street / 15th Street and Lavaca Street / 15th Street intersections would worsen and the level of service at the Guadalupe Street / 10th Street intersection would improve compared to the Build Alternative because most of the east-west traffic at Guadalupe Street and 10th Street would be diverted through the 15th Street corridor.

Table 6-1: Intersection LOS Comparison – Wooldridge Square Station Design Option

No.	Model Segment	Intersection	No Build		Build Alternative		Design Option	
			AM	PM	AM	PM	AM	PM
1	North Segment B	Guadalupe Street / 15th Street	B	D	C	C	C	F
2	North Segment B	Lavaca Street / 15th Street	B	F	E	D	E	F
1	North Segment B	Guadalupe Street / 10th Street	B	F	C	B	A	A
2	North Segment B	Lavaca Street / 10th Street	A	F	F	F	F	F

Source: AECOM 2024.

6.2 Cesar Chavez Station Design Option

The Cesar Chavez Station Design Option would locate the station and the guideway off-street on a diagonal through private property, integrated with the transit-oriented development that is being planned for the site. ATP developed this Design Option to explore the potential for a joint development opportunity with a private developer.

6.2.1 Traffic

Under the Cesar Chavez Station Design Option, levels of service would mostly be similar to the Build Alternative. The Trinity Street and 3rd Street intersection would benefit from traffic

diversion away from 3rd Street. Additionally, this Design Option would have bidirectional traffic flow on Trinity Street between Cesar Chavez Street and 2nd Street.

Table 6-2: Intersection LOS Comparison – Cesar Chavez Station Design Option

No.	Model Segment	Intersection	No Build		Build Alternative		Design Option	
			AM	PM	AM	PM	AM	PM
1	North Segment A	Trinity Street / Cesar Chavez Street	D	C	F	F	F	F
2	North Segment A	Trinity Street / 3rd Street	C	A	D	E	A	A
3	North Segment A	San Jacinto Boulevard / 3rd Street	B	C	E	D	D	E
4	North Segment A	Colorado Street / 5th Street	C	B	B	F	B	F
5	North Segment A	Congress Avenue / 5th Street	C	B	B	F	B	F
6	North Segment A	Brazos Street / 5th Street	D	C	B	E	B	F

Source: AECOM 2024.

6.3 Lady Bird Lake Bridge Extension Design Option

Extension of the light rail bridge south of Lady Bird Lake would include an elevated Waterfront Station. The bridge would be extended east toward Travis Heights Boulevard and south to just east of South Congress Avenue. This Design Option considers surrounding topography and vehicular and light rail operational challenges associated with an at-grade alignment of the junction connecting all three branches of the light rail system. This Design Option would require vertical circulation elements to access the elevated light rail station. The potential effects of this Design Option are discussed below.

6.3.1 Transit

Based on CapMetro's current route system, there is no local transit serving the Waterfront Station area; therefore, no effects would occur on transit operations. However, in the future, CapMetro might make modifications to transit service to serve the Waterfront Station. The Lady Bird Lake Bridge Extension Design Option may reduce the effect of transit signal priority because of its grade separation.

6.3.2 Active Transportation

Potential Benefits

As is the case with the Build Alternative, the Lady Bird Lake Bridge Extension Design Option would provide active transportation benefits within the station area by providing elevated dedicated bicycle facilities across Lady Bird Lake, which would offer a safe and comfortable experience for active transportation users. This Design Option would include a connection from South Congress Avenue to the trail crossing Lady Bird Lake and would provide active transportation benefits by providing a continuous bicycle facility from the north shore to South Congress Avenue. The exact location of bicycle facilities on the bridge structure would be determined in future design phases.

Potential Effects and Hazards

The Lady Bird Lake Bridge Extension Design Option does not include dedicated bicycle facilities along East Riverside Drive between the elevated shared use path and the Austin Boardwalk entrance west of Alameda Drive. A two-way bicycle crossing at Alameda Drive would connect the shared use path with the existing trail. Distances between crossings in this segment are substantial and may pose potential hazards for people biking and walking within the station area.

6.3.3 Traffic

The Lady Bird Lake Bridge Extension Design Option used the same traffic volumes as the Build Alternative, but these volumes do not account for future new developments and the additional traffic these developments might generate. The intersection of Riverside Drive/Trinity Street, shown in Table 6-3, is the proposed signalized intersection east of Riverside Drive/Congress Avenue.

Under the Lady Bird Lake Bridge Extension Design Option, levels of service would not change at the intersection of East Riverside Drive and South Congress Avenue (i.e., remains at LOS F), but traffic delays and queue lengths would improve in the eastbound direction compared to the Build Alternative. Reduced eastbound queue lengths would reduce the number of signal cycles motorists would experience before clearing the intersection. In addition, removal of the at-grade crossing would allow traffic to move through the intersection with more efficiency and less delay. However, the queuing in the westbound direction would remain the same due to the failing operation of Riverside Drive and South Congress Avenue intersection.

Table 6-3: Intersection LOS Comparison – Lady Bird Lake Bridge Extension Design Option

No.	Model Segment	Intersection	No Build		Build Alternative		Design Option	
			AM	PM	AM	PM	AM	PM
1	East	Riverside Drive / Trinity Street	F	E	F	F	F	F
2	East	Riverside Drive / Congress Avenue	F	F	E	F	E	F

Source: AECOM 2024.

6.4 Travis Heights Station Design Option

Under the Build Alternative, the Travis Heights Station would be located on East Riverside Drive north of Travis Heights Boulevard. ATP is evaluating the Project with and without a Travis Heights Station due to the identification of potential ROW effects on surrounding parkland and adjacent infrastructure projects, as well as low projected ridership estimates at this station. The potential effects of the Travis Heights Station Design Option are discussed below.

6.4.1 Transit

The elimination of the Travis Heights Station could have an effect on local transit bus stop spacing and placement due to the potential need to move, add, or consolidate local stops to serve the Travis Heights Station area.

6.4.2 Active Transportation

Potential Benefits

The Travis Heights Station Design Option, which would eliminate the Travis Heights Station, would provide the same active transportation benefits as the Build Alternative. Existing conditions in the station area do not include bicycle facilities along East Riverside Drive. The Project would provide benefits to people bicycling in the corridor area by providing a dedicated east-west bicycling path along the alignment in the form of a separated shared use path along East Riverside Drive.

Potential Effects and Hazards

Consistent with the Build Alternative, active transportation facilities would connect to those included within the current I-35 Capital Express Central Project design for I-35. This design is being completed by others. I-35 is a high-speed interstate facility with limited crossing opportunities that may present potential hazards in this segment.

6.5 Center-Running Bike/Pedestrian and Shade Tree Facilities on East Riverside Design Option

The Center-Running Bike/Pedestrian and Shade Tree Facilities on East Riverside Design Option extends from Lakeshore Drive to Yellow Jacket Station and includes bicycle and pedestrian facilities adjacent to and south of the guideway between the westbound and eastbound East Riverside Drive lanes. The track and roadway lane configuration is similar to the Build Alternative, while the back-of-curb elements have been reconfigured into an 8-foot shared use path on each side of East Riverside Drive with a bikeway and sidewalk or shared use path in constrained areas adjacent to the light rail guideway. The potential effects of this Design Option are discussed below.

6.5.1 Active Transportation

Potential Benefits

The Center-Running Bike/Pedestrian and Shade Tree Facilities on East Riverside Design Option would provide active transportation benefits for people biking and walking along this segment. Currently, East Riverside Drive has no bicycle facilities.

East Riverside Drive also has a large number of driveways on both sides of the corridor. By placing active transportation facilities between the light rail and eastbound traffic lanes, users traveling east-west along this segment would avoid potential conflicts with automobiles entering or exiting these driveways.

Potential Effects and Hazards

As is the case in the Build Alternative, East Riverside Drive has relatively few crossing opportunities, particularly east of Tinnin Ford Road. Long crossing distances across East Riverside Drive would be mitigated by providing two-phase crossings with a center median.

6.5.2 Traffic

Under the Center-Running Bike/Pedestrian and Shade Tree Facilities on East Riverside Design Option, the width of East Riverside Drive would increase, and the complete pedestrian movement would need to be accommodated across two signal cycles to avoid effects on east-west traffic. As a result, delay would increase for movements in all directions at the intersection of East Riverside Drive and Pleasant Valley Road. This effect is largely due to the need to create a dedicated pedestrian crossing phase for east-west bicycles and pedestrians within the median of East Riverside Drive during every signal cycle. As a result, east-west motorists would have less time to make left turns.

Table 6-4: Intersection LOS Comparison – Center-Running Bike/Pedestrian and Shade Tree Facilities on East Riverside Design Option

No.	Model Segment	Intersection	AM Peak LOS		PM Peak LOS	
			Build Alternative	Design Option	Build Alternative	Design Option
1	East	East Riverside Drive / Coriander Drive	D	E	E	D
2	East	East Riverside Drive / Anise Drive (north) and Montague St (south)	F	F	C	C
3	East	East Riverside Drive / Frontier Valley Drive (north) and Maxwell Lane (south)	F	F	E	E
4	East	East Riverside Drive / Vargas Road	F	E	D	F
5	East	East Riverside Drive / Montopolis Drive	F	F	F	F
6	East	East Riverside Drive / Grove Boulevard	F	F	F	F
7	East	East Riverside Drive / Faro Drive	F	F	F	F
8	East	East Riverside Drive / Crossing Place	F	F	F	E
9	East	East Riverside Drive / Wickersham Lane	F	E	F	F
10	East	East Riverside Drive / South Pleasant Valley Road	F	F	F	F
11	East	East Riverside Drive / Willow Creek Drive	F	D	F	F
12	East	East Riverside Drive / Burton Drive	D	D	F	F
13	East	East Riverside Drive / Royal Crest Drive	C	C	E	F
14	East	East Riverside Drive / Shore District Drive (north and Parker Lane (south)	C	C	F	F

No.	Model Segment	Intersection	AM Peak LOS		PM Peak LOS	
			Build Alternative	Design Option	Build Alternative	Design Option
15	East	East Riverside Drive / South Lakeshore Boulevard	C	C	F	D
16	East	East Riverside Drive / Summit Street	A	A	C	C

Source: AECOM 2024.

6.6 Grove Station Design Option

The Grove Station Design Option would combine the Montopolis and Faro Stations into a single station at Grove Boulevard. ATP is advancing this Design Option to evaluate its connectivity with the bus network and its potential for more direct access to nearby planned affordable housing. The Variation to the Grove Station Design Option would keep the Montopolis Station at its original location and would move the Faro Station 800 feet to the east, nearer to Grove Boulevard. This variation also complements the Center-Running Bike/Pedestrian and Shade Tree Facilities on East Riverside Design Option. The potential effects of this Design Option are discussed below.

6.6.1 Transit

The consolidation of the Montopolis and Faro Stations could have an effect on local transit bus stop spacing and placement due to the potential need to move, add, or consolidate local infill stops.

6.6.2 Active Transportation

Potential Benefits

The Grove Station Design Option provides many of the same benefits of the Faro and Montopolis Stations by providing dedicated bicycle facilities along East Riverside Drive where there are currently no facilities. The Project would also provide connections to existing trails in the area, such as the Country Club Creek Trail. The connection is not yet finalized, and the connection design is yet to be determined.

New facilities along East Riverside Drive would also connect to existing and planned bicycle facilities along Crossing Place, Faro Drive, and Grove Boulevard. The proposed CapMetro Bikeshare bicycle rental station at Grove Station would also provide benefits to active transportation users in the station area.

Adjacent signals planned under the Build Alternative at the East Riverside Drive and Clubview Avenue intersection and the East Riverside Drive and Brassie Street intersection would be especially beneficial for active transportation users in the station area by providing additional safe crossing locations. The placement of bus stops between bicycle facilities and the curb

would also reduce potential conflicts between users traveling east-west and passengers waiting, arriving, or disembarking at bus stops.

Potential Effects and Hazards

As in the case of the Build Alternative, long crossing distances between signalized crossings would continue to exist in this segment. This creates potential hazards for people looking to cross East Riverside Drive, a high-volume and high-speed arterial. Additional crossing opportunities through pedestrian hybrid beacons or other crossing infrastructure could be recommended, potentially through partnerships with future developments in the station area.

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